



# AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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## AMERICAN RAILROAD JOURNAL.

NEW-YORK, MAY 16, 1835.

**CANALS AND RAILROADS.**—We commence in this number the Report made to the Canal Commissioners of this State, by John B. Jervis, Holmes Hutchinson, and Frederick C. Mills, Esqrs., Civil Engineers, upon the relative cost of, and cost of transportation on, Railroads and Canals. It contains much useful information, and should be read with care by those interested in such works.

It does not require a very close examination to discover the kind of improvement preferred by the gentlemen who made the Report. They appear to entertain, as many other very intelligent men do, the opinion that Railroads cannot compete successfully with Canals.

Of the correctness of this opinion, as it relates to transportation of heavy articles, we are not disposed at present to object; but for purposes of travel, light freight and the mails, Railroads must, we think, supersede all other modes now in use. We ask for this report an attentive perusal by Engineers, and offer the columns of the Journal for a proper discussion of the subject by those who have the leisure and disposition to enter into it—neither of which, nor the ability, is possessed by us:

The *Pittsburg Gazette*, advertising to the benefits which, what are called "the cross-cut canals"—viz. those that will connect the great Pennsylv-

ania Canal at Pittsburg with Lake Erie at Cleveland by the route of the Ohio Canal—will confer on Pennsylvania, and Pittsburg in particular, exclaims—

"Pennsylvania, Philadelphia, and Pittsburg are truly in the full tide of successful experiment—their destinies are rapidly unfolding themselves. When these junction canals are completed, New York will have to execute a release of all claim upon the trade of Ohio."

New-York will not, we trust, much longer pursue the suicidal course in relation to the Trade of the West, which has marked her late legislation. She will never, never "execute a release." She merely rests her claims for a time, to witness the eagerness with which her neighbors labor for the prize.

**WEVERTON MANUFACTURING COMPANY** is the title of a company formed in Maryland, for the purpose of carrying on the manufacturing business in its various branches. The situation selected for its operations is on the Potomac, about three miles below Harper's Ferry, and immediately on "the lines of the Baltimore and Ohio Railroad, Chesapeake and Ohio Canal, and Frederick and Harper's Ferry turnpike road. At Harper's Ferry these three great avenues of communication separate, and embrace in their respective ranges, a very extensive, fertile, and populous country. Immediately below, the turnpike road leaves the river, and crossing a most productive country reaches the city of Frederick in a distance of sixteen miles. Nine miles below, at the Point of Rocks, the canal and railroad separate, the latter passing on to the city of Baltimore, and the former running to the three cities in the District of Columbia. A railroad to diverge from the Baltimore and Ohio Railroad at Weverton, and to run to Hagerstown, Maryland, and Chambersburg, Pennsylvania, is contemplated, and no doubt will be soon constructed."

Thus we see the effects of the system of internal improvements adopted, and with so much zeal carried on, in this country—villages, towns, and cities, springing up in every part of the country, where, but for

such improvements, the click of the hammer would never be heard.

"The power proposed to be employed by the Weverton Manufacturing Company, is the water of the Potomac river. The fall which may be commanded without an artificial dam, is upwards of eight feet, but three or four feet more could be obtained by the construction of a dam on the ledge of rocks which now forms a natural dam."

A company is formed for the purpose of improving the advantages of the place. Col. Mauley, a gentleman of high respectability, is now in this city for the purpose of receiving subscriptions to the stock. He has left with us copies of the charter, and a description of the place, which may be seen by those who desire information upon the subject.

A Friend to Canals and Railroads will find in the *Railroad Journal*, if he uses it, the most extensive, and probably the most careful investigation of the subject of canal navigation, that has been published. He will find, however, that according to these experiments, broad canals are not considered by Mr. Macneill as best adapted for speed.

To the Editor of the *Mechanics' Magazine*:

In the valuable letter of Gerald Ralston, in your last number, he speaks of General Mercer truly as the "advocate of broad and deep canals for transportation." He also advocates, and has long endeavored to draw the attention of those interested in canals, to the use of the Paisley passage boats. The principle on which their success has depended has not yet been demonstrated. But those on which he has advocated the superiority of wide and deep canals for transportation have been long known, and their truth admitted. An exemplification is given in the difference of strain on the horses on the Schuylkill canal; on the narrow canals it is hard, on the pools, easy.

You could not better serve the cause of internal communication, than by accepting the offer of Mr. Ralston, and request him to give all the information which his time and opportunities will permit on the subject of these swift canal boats.

A FRIEND OF CANALS AND RAILROADS.



*Report of John B. Jervis, Holmes Hutchinson, and Frederick C. Mills, to the honorable the Canal Commissioners of the State of New-York:*

GENTLEMEN: We have examined the question you submitted to our consideration, in relation to the relative cost of construction and repairs of canals and railroads, and also the relative expense of transportation, and present in the following report the facts and views we have been able to obtain. The importance of the subject compels us to regret that more time could not consistently have been taken, to obtain further facts, and allowed us to carry the investigation into greater detail. We have felt compelled, in a great degree, to confine ourselves to an exposition of prominent features, in the two methods of facilitating internal communication. We believe, however, the facts presented, and the exposition of the bearing of those facts, will be found useful, in leading to correct conclusions in regard to the question under consideration.

#### RAILROADS.

The utility of railroads is materially, and in some respects, peculiarly affected by the ascent and descent that is overcome, and the relative amount of trade requiring transport in opposite directions. For instance, a railroad requiring transport only in one direction, would be most favorable with such a declivity in the direction of the freight, as would require the same power to move the loaded wagons, as would be necessary to return with the empty ones: and this declivity would decrease in cases requiring transport in both directions, and become level when the freight was equal.

In this country, it rarely occurs that freight is equal in both directions; more frequently it is 2, 3, and 4 to 1. To obtain the most favorable graduation to the trade to be accommodated, it is essential that it be uniform, or nearly so; which the route would not often admit without too great expense, and in some cases would be impracticable. On important lines for general trade that have any considerable extent, there will, from the character of the country, often require a level, and sometimes a small ascent, in the direction of the greatest trade; and it would be a favorable compromise to exchange all acclivities and declivities for a level road. Though there would be exceptions, still it is believed a level road would afford a fair standard in determining the general question of utility.

Below will be found a statement of the cost of several railroads, and in some cases the cost of transportation.

It is to be regretted that more authentic information of a practical character is not in our possession. The authorities, as well as the facts, are stated to show the weight which they are entitled to. In some important cases they are authentic; and these will be adopted as the basis of our conclusions.

#### Baltimore and Ohio Railroad.

From Baltimore to Point of Rocks, 67½ miles, by report of chief engineer, (October, 1832,) this section was stated to be nearly complete, and the cost \$29,193 per mile. In a document of second session 22d Congress, No. 93, it is asserted this road had then cost nearly \$34,000 per mile. We have examined the subsequent reports of the directors and their officers, and find nothing to change the statement of \$29,193 per mile.

The grading of this road is done in a substantial and durable manner; over ½ of

the superstructure is timber sills and rails, capped with an iron plate; ¼ (or ⅓) is stone rails capped with iron plates; and ⅓ is timber rails on light stone blocks.

The cost of transportation for the year ending 31st September, 1834, as per report of superintendent of transportation, was for motive power and all other charges, (excluding repairs of road,) except interest and fund for renewal of wagons, \$62,348 57. Superintendent of machinery reports 1,000 wagons on the road; their cost is not given. They probably cost from \$150 to \$200 each; if on steel springs, the latter, otherwise the former: they may be estimated at \$150 each, which for 1,000 is \$150,000; interest on their cost, and to provide a fund for renewal, is believed should be at 25 per cent., which is, 37,500 00

Total cost of transportation, exclusive of tolls or profit, for 56,120 tons, is, 99,848 57

The average charge of the company, per said report, is within a small fraction 4½ cents per ton per mile, produces the sum of 116,254 79

The ratio of receipts to expenditures is 1 to 0.85, and  $4.66 \div 0.85 = 3.96$  cents per ton per mile, as the expenses.

The expenses the previous year are stated by same report to have been higher: but as we have not the detailed statement, we cannot give the exact difference.

This railroad has ascents, descents, and curves, which affect the economy of transportation.

In regard to curves, this road may be considered as having more than is usual on railroads, designed mainly for general trade.

All lines of railroad, of any considerable extent, will be curved more or less, according to the character of the country through which they are constructed. It is the first object to have it straight, and next, the lightest curvature the country will admit: the minimum will therefore, be determined by local circumstances. While it is considered this road has more curvature than will occur as a general average, it is obviously impracticable to determine what this average may be. The chief engineer, J. Knight, of this (Baltimore and Ohio) railroad, made experiments on the increased resistance produced by curves, which led him to the conclusion, that in a curve having a radius of 400 feet, the traction was increased 50 per cent. If locomotive engines were used, then loads would be regulated by the greatest resistance they had to overcome, on any part of the route; but a horse can increase his effort, for a short distance, which enables him, on a road that has occasionally sharp curves or ascents for moderate distances, to perform a greater average of useful effect than can be obtained from locomotive steam power. The freight business for this road is performed by horse power. The sharpest curves generally occur in short distances, intervening between straight lines and larger curves, and will not, therefore, affect the cost of transportation to so great a degree as if locomotive steam power was used. If we assume 10 per cent. of the resistance on a level and straight line, as the excess over a general average arising from extra curvature on this road, and apply it to the section between Parr Ridge and Baltimore, we shall not probably be far

from its true influence on the cost of transportation.

The next and most important question that affects the cost of this transportation is the ascent and descent. The character of this road in relation to its elevations, seems to indicate the propriety of dividing it into sections, and applying on each the power necessary, without regard to the other. The following divisions have therefore been made, to wit:

1st. From Baltimore to Parr Ridge, foot of 1st inclined plane—length, 40½ miles; ascent westward, 590 feet; descent, 23 feet; total, 613 feet; ascent averages 14.75 feet per mile.

2d. Embraces the 4 inclined planes that pass Parr Ridge, 1.94 miles; ascent and descent, 429 feet, viz.:

No. 1, 2,150 feet, rise  $\frac{1}{10.75} = 80$  feet; No. 2, 3,000 feet, rise  $\frac{1}{10.12} = 99$  feet. Total ascent, 179 feet.

No. 3, 3,200 feet, fall  $\frac{1}{15.05} = 160$  feet; No. 4, 1,900 feet, fall  $\frac{1}{11.12} = 81$  feet. Total descent, 241 feet. Whole amount 420 feet.

Intermediate level, about 3½ miles.

3d. From foot of plane No. 4, to end of continuous declivity westward, 11½ miles; total descent, 285 feet; average, say 25 feet per mile.

4th. The remainder of road, to Point of Rocks and branch to Frederick, a fraction over 16 miles; descent westward, 169 feet; average 10.56 feet per mile; ascent westward, 131 feet. Total rise and fall, 300 feet.

The ascent westward, for the 4 divisions, is 900 feet, The descent westward, for do. 718 "

Total ascent and descent, 1,618 "

By the report referred to, it appears the ratio of freight moving eastward to that moving westward, was nearly as 2 to 1; for calculation we therefore adopt this ratio.

It has been shown that the 1st division has an average ascent of 14.75 feet per mile. This ascent, however, is not uniform; in several places for short distances it descends westward, some portions are level, and the ascents are at rates varying between 2.64 and 37.48 feet per mile, excepting a short piece near the foot of inclined plane. They seldom much exceed 20 feet, except for short distances. The length of grades at the higher rates of ascent is generally less than one mile, and alternate with those of medium rate; except near the inclined plane. In view of the character of this division, it is believed animal power will allow such variations as to accommodate the varying resistance, with nearly as much economy as on a uniform ascent. If we calculate on a uniform ascent of 18 feet per mile, we shall not probably vary essentially from the true economy of the case.

It has been observed, the freight is as 2 to 1 in the opposite direction, being least westward. The weight of the wagons will probably be ½ of the gross load; and for computation, we may assume the wagon to weigh one ton; and consequently the freight eastward will be 2 tons and that westward 1 ton.

The resistance from friction is taken at ⅓ of the gross load, the velocity being low. On a level this will require nearly 9 pounds per ton, on an ascent of 18 feet per mile gravity will be ⅓ of the load, or 7.64 pound per ton. The wagon and its freight going westward makes a gross load of 2 tons; the resistance will there-



fore be  $9+7.64 \times 2=33.28$  lbs. To carry on a level road, a load which including wagons would be 3 tons, the resistance would be  $9 \times 3=27$  lbs. The road, with a few exceptions, descends eastward or is level. The ascents are small; and so near the eastern termination, that, in the average, less power would be required than on a level; but we require 33.28 lbs. to move westward, after providing for varied effort by the animal. Now, as a general result, we could not expect a more equal ratio of freight in the two opposite directions than in this case, and if 27 lbs. is required on a level, we have an excess of power to provide for the load moving westward, of  $33.28-27=6.28$  lbs., and as this will return with the opposite load, we have extra power for the two directions  $=12.56$  lbs. more than required for a level road, or 23 per cent. extra. This added to the extra curvature of 10 per cent., raises the extra traction to 32 per cent. on this section. The cost of the moving power is nearly  $\frac{2}{3}$  of the total expense, and  $32 \times .40=14.80$ , say 15 per cent., the cost of transportation over a level road; and  $40.25 \times .15=6.03$ , or equal an increase in the length of this division of 6 miles.

2d division. The total ascent westward is on the inclined planes Nos. 1 and 2; their total length is 5,150 feet, and ascend at an average rate of one in twenty-eight and three-fourths. It is obvious, the load moving westward will determine the expense of power, as that in the opposite direction on these planes will descend by its own gravity, requiring only the expense of brakemen to control its descent within a safe velocity, which may be done by a part of the drivers, whose teams could be led back by others. In moving up this ascent, a horse would require 35 per cent. of his power to overcome the gravitating force of his body; but as he would be loaded only in one direction, and the length of either plane but little exceeding half a mile, it is believed to be a fair estimate to compute, in this case, the useful effort of his power as equal what it would be on a level. We have one ton of goods and one ton of wagon, making a gross load of 2 tons moving westward. The total resistance up the plane will be 173 lbs., or 5.4 times greater than the load in the opposite direction, (3 tons gross,) would be on a level. The two planes are together 0.97 miles in length. The ascent will make the extra resistance equal  $5.23 \times .4=2.09$  miles.

The 3d and 4th planes descend westward; their total length is 5,100 feet, and descend at an average rate of  $\frac{1}{27.13}$ . For these planes, we must compute the power required to ascend them with the load moving eastward, which is 3 tons including wagon. The horse will require 47 per cent. of his power to overcome the gravitating force of his body up the plane; and though he will, as in the case of the other planes, be loaded only in one direction, still it is believed that 10 per cent. should be taken from his average useful effort in ascending Nos. 3 and 4. The resistance of 3 tons up these planes will be 344 lbs., equal 11.73 times greater than on a level, or including the loss in the effective power of the horse, equal 13.13 times greater. The two planes are .96 miles  $\times 13.12 \times .4=4.3$  miles extra length of transportation. The influence of the planes on this division increases the moving power equal to what would be required for 17 miles of level road, and taking the moving power at 40 per cent. of the total expense of freight, a fraction over 64 miles, entire cost of transportation.

3d division. Ascends eastward at the average rate of 25 feet per mile, varying from 9.76 to 52.80. The grades that have the higher rates of ascent are short, and in view of the small amount of labor required of the horses in the opposite direction, it will probably not vary materially from the truth, to compute the power at the average rate of ascent, or  $\frac{1}{25}$ . A load eastward is 3 tons, including wagons, and the resistance will be 58 lbs., equal 2.14 times that on a level; or for 11.25 miles, requiring extra moving power, equal what would be required for 12.82 miles on a level, or equal the total expense of transportation for 54 miles.

4th division. Is quite of an undulating character; the ascent is greatest in the aggregate in the direction of the greatest trade, but the grades have a less rate of ascent than in the opposite direction. The average ascent in the direction of the greatest trade will be a fair basis of computation for the section. This is  $\frac{1}{33}$ , and the resistance for 3 tons, (as before,) is 40.44 lbs. or 50 per cent. greater than a level. For 16 miles the extra moving power is equal 8 miles on a level, or equal the total cost of transportation for 34 miles nearly.

In the first division we have extra equal	6 miles.
In the second division we have extra equal	64 "
In the third division we have extra equal	54 "
In the fourth division we have extra equal	34 "
	214 "
Total length of road is	71
	—92.12

The actual cost of transportation has been shown to be 3.96 cts. per ton per mile. To reduce this to our standard, we have the cost of transportation, exclusive of toll or profits, 3.05 cts. per ton per mile, with freight as two to one in the different directions.

By report of superintendent, the moving power cost 1.08 cts. per ton per mile.

Repairs.  
Year, ending October, 1833, \$444 per mile.  
" " " 1834, \$321 " "

Average for 2 years, \$382.50.  
A road constructed mostly of timber will vary much in the cost of repairs for different years, and several are therefore necessary to obtain a proper average.

Cost of transporting passengers per mile, 1.98 cts. as stated in Hazard's Register of Pennsylvania, v. 15, p. 112.

Liverpool and Manchester Railway.

In a statement published by Mr. Booth, the treasurer of the company, dated June 30, 1830, the expenditure up to that time, including an estimate, (the road was at this time nearly completed,) to finish some unimportant items of work, it appears the construction of the railway, exclusive of warehouses, wharfs, offices, engines, wagons, and other items not connected with the construction of the road, cost 694,595*l*. for 31 miles, equal  $22,406*l*. \times 4.80 = \$100,748$  per mile. There have, subsequently, been heavy expenditures, not embraced in the account of repairs, but we are not sufficiently advised of their object to say whether, or not, any part of it belonged to the amount of the original construction of the road.

It appears from four semi-annual reports of the directors, the expense of repairs have been as follows, to wit:

Report of July, 1832, 1st January to 30th June,	£7,351 0 6
Report of January, 1833, 1st June to 31st Dec.,	6,878 4 3
Report of July, 1833, 1st January to 30th June,	6,714 9 3
Report of January, 1834, 1st July to 31st Dec.,	6,425 14 8

Total for 2 years, £27,349 8 8  
Equal, for 31 miles,  $882 \times 4.80 = \$4,233$  per mile, which, for one year, is equal \$2,116 per mile, commencing about a year after the road was opened for business.

A table is given of the general expenses in the six months previous to that reported in July, 1832, in which the expenses of repairs is included with some other items. This aggregate sum is very nearly the same as reported in detail, showing there had been no material variation in repairs for the six months previous to that particularly reported.  
(To be continued.)

THE STEAM CARRIAGE COMPANY OF SCOTLAND have brought an action of damages against the Trustees of the turnpike road between Glasgow and Paisley, for having compelled them to give up running on that road (after doing so with great success for several weeks continuously) by "wantonly, wrongfully, and maliciously accumulating masses of metal, stones, and rubbish, on the aforesaid road, in order to create such annoyance, hazard, and obstruction, as might impede, overturn, or destroy the steam-coaches belonging to the pursuers (plaintiffs)." The summons or declaration states, that the hostility of the defendants was carried to such a pitch, that they made the road not only impassable for steam-carriages, but nearly so for carriages of every description. "The ordinary horse-carriages running upon the road were also much injured, and the heavy carts and waggon usually plying between Glasgow and Paisley were obliged to desert the said road, and to go round by a different and a longer route." The damages are laid at £30,000!

CEMENTS.—Mortar made of good lime and clean sharp sand may be successfully employed for the same purposes as Roman cement, provided it be allowed sufficient time to dry before water is permitted to rest upon it. This was mentioned many years ago by Arthur Young, in his "Agricultural Survey of Lincolnshire," and we have seen it proved in a variety of instances. In stuccoing the front of a house in or about London, for example, no builder need ever have recourse to any of the metallic cements, (including under this term Roman cement, Parker's cement, Hamblin's mastic, and all other quick-setting cements, which are only quick-setting in consequence of their containing some metallic oxide,) provided he can procure the best stone lime from Dorking or Aberthau. For our own parts, we should have more confidence in the durability of stucco so formed than in that of any of the cements.  
—[Mr. Loudon, Archit. Mag.]



[For the American Railroad Journal.]

**Remarks on the Substitution of Locks for Inclined Planes on Railways.**

The disuse of stationary steam power on railways has long been an object whose attainment has been anxiously desired, but hardly expected. Attention to this subject is daily increasing, as its importance is continually growing more apparent.

The efforts of ingenuity have heretofore been generally directed to improvements in the locomotive engine, by which it would be enabled to move up very considerable ascents by its own unassisted strength. In a late number of the Railroad Journal, I find an extract from a Baltimore paper, stating that an engine had been fabricated in that city able to rise on an elevation of two hundred and sixty feet in a mile, or one foot in twenty; and the belief is expressed, that the same species of engine would be capable of carrying one hundred passengers in a train of cars, up an acclivity of one hundred feet in a mile, at the rate of ten miles an hour.

This may perhaps be all accomplished, but still I have doubts as to the substantial utility of such an achievement. For the attainment of the greatest degree of economy, all the power of the engine, which may be safely exerted, should be constantly employed. But if sufficient energy is provided to rise such steep acclivities, there must be an immense superabundance and waste throughout all the other portions of the route.

In a report of the commissioners of the Liverpool and Manchester Railway, made to the House of Commons a few years since, it is stated, as the result of experiment, that an engine capable of moving thirty tons over a level track could raise no more than seven tons on an elevation of one foot in a hundred, or about fifty-two in a mile. If this be true, the same engine would be unable to draw more than three tons at the utmost, where the ascent was a hundred feet in a mile, since the load capable of being propelled would have to be diminished much faster than in a direct proportion to the degree of acclivity; and since the engine and its appurtenances occasion almost the sole expense of transportation, the cost of carrying three tons over such an undulating road would be nearly equal to the freight, on thirty tons upon a level way. The whole load which an engine can transport will be limited by what it can move over the most difficult part of the way. Now, I do not doubt but that engines may be constructed capable of raising a load on an elevation of one hundred feet in a mile; but would it not be wiser to construct the road more nearly level, so that the same engine might carry a load several times as large? Where the transportation of passengers is alone concerned, economy being of little consequence in comparison with speed, such a waste of power may be justified; but where intended principally for the carriage of freight—where the diminution of expense is the principal object, there are

very strong objections to an arrangement by which a large proportion of the propelling power lies waste and idle during the greater part of the journey, to be exerted only on the ascent of eminences.

In England, where there is much more experience than in this country, not only in the construction, but also in the operation of railroads, it is considered unwise to attempt the ascents of more than fifty feet in a mile by the sole power of the locomotive.

But it is not merely a want of power which fixes a limit to the degree of ascent practicable on railways. No matter what the ability of the engine, if the adhesion of the wheels to the rail is not sufficient to prevent them from sliding round in their places, the load cannot be moved; and this it is which, more than any thing else, renders rapid ascents impracticable. Experiments made when the wheels and rails are new, and not yet worn smooth by use, are not satisfactory upon this point, especially when it is recollected that those rails may not unfrequently be rendered slippery by ice or snow. The importance, therefore, of resorting to some other substitute for inclined planes, beside those hitherto contrived, is sufficiently evident.

An expedient of such a nature has lately received some notice, not only in the columns of this Journal, but also in those of several other public prints of this city. I refer to the railroad lock invented by Colonel Taylor. An attentive examination will, I think, convince any one, that its operation is founded upon well established principles of mechanical philosophy, and that it must prove successful.

The great object of the lock in question is to enable the locomotive engine to raise itself and all its train by its own unassisted strength, over any elevation, no matter how high, or how steep. This object is attained by a recourse to that universal mechanical principle, that what a power wants in intensity may be made up for in distance; that if it is only the half of what would be required to move a given weight on a direct application, such machinery must be interposed as that the distance through which the power moves may be twice as great as that through which the weight is raised. The merit of the invention in question consists in this: That when an ascent is to be overcome, and the power ordinarily required becomes insufficient, a provision is made by which the distance traversed by it may be any number of times greater than that ascended by the weight, so that no additional force is called for to assist the locomotive in any emergency.

This is accomplished by the agency of screws, which being moved by the power of the locomotive itself, elevate the engine and all its train perpendicularly from one reach to another. It will be readily perceived that such machinery may be interposed between the power and the load, that the distance traversed by the former, that is to say, the space through which the piston moves, shall bear any necessary proportion to that ascended by

the latter, and thus success be rendered certain.

As has been already observed, the great object to be attained in order to secure the strictest economy in transportation, is such an arrangement that the power required to propel the load may be the same throughout every portion of the route. Now suppose the road to be perfectly horizontal, and all changes of level between one reach and another to be effected by the locks in question; and suppose the machinery of those locks to be so constructed and proportioned that the same power which propels the load upon the rails should be just sufficient to raise it upon the locks, the object desired is completely attained. Not one ounce of power would lie idle throughout any portion of the route—not an ounce would be wanting. There would be neither loss nor deficiency, and the system, so far as economy of transportation was concerned, would be perfect.

Such a state of exactness would not, however, be necessary or advisable. The increased expense of grading would more than counterbalance the advantage to be gained from a perfectly level road. The power of a steam engine is not fixed and invariable. It may to a certain extent be increased without detriment, so as to enable it to rise over moderate elevations. Still it is sufficiently evident, that although it may not be practicable to carry the proposed system to a degree of absolute perfection, yet that state may without difficulty be so nearly approached as to secure the greatest advantages.

I have at this time paid no regard to the superior excellence of the lock in question, so far as safety, convenience, and economy of construction, were concerned. This might be readily shown, and in many respects will be at once perceived, without further explanation. There is every probability, therefore, that success will crown this endeavor to improve the construction of railways, and will, I trust, become an important era in the history of internal improvements.

M.

*Report of John B. Jervis, Holmes Hutchinson, and Frederick C. Mills, to the honorable the Canal Commissioners of the State of New-York:*

(Continued from the preceding page.)

**Transportation.**

The reports above referred to, embrace 4 semi-annual accounts for transportation, and one tabular view of transportation for 6 months previous, from which the following table is made.

The report of July, 1832, contains a statement of transportation for the two semi-annual terms preceding.

In the tabular account of given by the directors, the maintenance of way and rate, taxes and omnibusses are charged to transportation; but in the following table these are not included, as it is the design to exhibit the cost of transportation separate from other expenses; these items are given in the table of directors' reports, with others, but are separate in the general account.



TABLE, showing the cost of transportation per passage, and per ton of merchandize, for 31 miles, on the Liverpool and Manchester Railroad.

	Report of Jan., 1832.		Report of July, 1832.		Report of Jan., 1833.		Report of July, 1833.		Report of Jan., 1834.		Average of five semi-annual statements.	
	Cost per passenger.	Cost per ton of merchandize.	Per passenger.	Per ton of merchandize.	Per passenger.	Per ton of merchandize.	Per passenger.	Per ton of merchandize.	Per passenger.	Per ton of merchandize.	Per passenger.	Per ton of merchandize.
Disbursements in the merchandize department, consisting of portage, salaries, carting, stationary engine, disbursements, &c. &c. ....	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Disbursements in the coaching department, comprising portage, salaries, repairs, &c. &c. ....	0 7	.....	0 7	.....	0 6	.....	0 9	.....	0 9	.....	0 7	.....
Locomotive power account, proportioned according to the number of trips of 30 miles in each department; comprising repairs of engine, wages, coke, &c. ....	0 6	1 11	0 7	1 7	0 10	1 2	1 0	1 6	0 8	1 6	0 9	1 4
Sundry disbursements, proportioned according to receipts, as between coachery and merchandize, comprising police and gate establishment, and general office. ....	0 1	0 3	0 2	0 4	0 1	0 3	0 2	0 2	0 2	0 2	0 2	0 2
Interest, on loans, and chief rents, proportioned according to the amount of profit in each department, calculated exclusively of these items of disbursement. ....	0 4	0 4	0 6	0 8	0 4	0 7	0 5	0 6	0 4	0 4	0 5	0 6
Total disbursements. ....	1 7	7 2	1 11	6 7	1 11	5 5	2 4	6 0	2 0	5 11	1 11	6 1

TABLE, showing the number of passengers, and the tons of merchandize, passing the whole length of the road; and also receipts and expenditures for the entire transportation, including the way and coal business, and that passing the whole length of the Liverpool and Manchester road.

Information, where obtained.	Passengers.		Merchandize.		Total.		Excess of receipts over expenses.	Ratio of receipts to expenditures.
	No.	Expense.	Receipts.	Passing through.	Expense.	Receipts.		
		£.	£.	Tons.	£.	£.	£.	
Semi-annual report of directors, dated July, 1831, for 6 months, ending December 31, 1831. ....	.....	25,930	58,348	.....	21,841	29,022	49,025	1.83 to 1
Semi-annual report of directors, for 6 months, ending 30th June, 1832. ....	174,122	21,957	40,044	57,174	22,445	30,436	46,658	1.60 1
Semi-annual report of directors, dated January, 1833, for 6 months, ending 31st December, 1833. ....	182,823	23,744	43,120	61,995	22,277	35,509	48,278	1.67 1
Semi-annual report of directors, dated July, 1833, for 6 months, ending 30th June, 1833. ....	171,421	24,746	44,130	68,284	26,447	38,149	52,900	1.62 1
Semi-annual report of directors, dated January, 1834, for 6 months, ending 30th December, 1833. ....	215,071	27,345	54,685	69,806	27,357	38,641	56,350	1.70 1
Railroad Journal, vol. 3, 609, given as facts from report of directors of July, 1834, for 6 months, ending June 30th, 1834. ....	244,326	.....	50,770	77,528	.....	44,014	60,092	1.57 1

Note.—It will be perceived the column of tons, only embraces that passing the whole length of the road, while the receipts and expenses on transportation include the way business.

From the reports of the directors on their statement of general accounts, it appears probable, the amount of repairs of wagons and coaches, includes the purchase of new ones when required, to supply the place of those that fail: the interest account is supposed to be interest on cost of locomotives, engines, coaches, wagons, &c.; there is no other item that embraces the interest on the outlay, and it is presumed this is intended. There is a charge for carting included with other items, and from the general account would appear to be about 7d. per ton: we have not deducted this item, for the reason it was impracticable to determine exactly what it amounted to; and the question whether the interest account included the total interest on the outlay for the transportation department, with such allowance as would, beyond what was included in repairs, make the necessary renewals, being doubtful, we have thought a further reason for leaving it as it is. The table cannot however, be far from the proper expense of transportation.

#### For Merchandize.

The lowest cost per ton is 5s. 5d. = \$1.31, or per mile, 4.22 cts.

The highest cost per ton is 7s. 2d. = \$1.72, or per mile, 5.55 cts.

The medium, or average of the table, is 6s. 1d. = \$1.46, or per mile, 4.70 cts.

#### For each Passenger.

The lowest cost is 1s. 7d., equal to \$0.39, or per mile, 1.28 cts.

The highest cost is 2s. 4d., equal to \$0.56, or per mile, 1.82 cts.

The average cost is 1s. 11d., equal to \$0.47, or per mile, 1.53 cts.

The second table contains the aggregates for one term of six months later than the above table: it does not appear that transportation was lower for this term than previously, but on the contrary is confirmatory of the above average results, which may, therefore, be viewed as based on three years' experience.

Having ascertained the cost of transportation on the Liverpool and Manchester railway, we now proceed to reduce the cost of freight to our standard of comparison; a level road.

The following comparative statement of the expense of transportation will be found both useful and interesting.

#### Comparison of Rates of Transportation.

	Price per ton of 2000 lbs. per mile.	Cost if carried 200 m.
Prices of transportation during the years 1817, 1818, 1819, by teams, from Albany to Buffalo, (usual rates, \$4.25 per cwt.) .....	c. 29.3	\$58.60
Rates of 1835, (including tolls):		
By Erie Canal—For Merchandize ..	3.95	7.90
Flour .....	1.83	3.66
Staves .....	0.97	1.94
Salt .....	0.93	1.86
Baltimore and Ohio Railroad —		
Down freight .....	4.0	8.00
Up " .....	6.0	12.00
Liverpool and Manchester Railroad —		
For merchandize .....	7.5	15.00
Hudson river, 145 miles—Heavy goods, (from New-York to Albany 10 cents per 100 lbs. ....	1.38	2.76
Light goods, 30 " " " ..	2.76	5.52
Provisions, &c. 7 " " " ..	0.96	1.92
Lake Ontario—Merchandize, (from Oswego to Lewiston, 146 miles, 20 cts. per 100 lbs. all kinds.) ..	2.74	5.48
Lake Erie — Merchandize, (from Buffalo to Cleveland, 190 miles, 23 cts. per 100 lbs.) for heavy goods .....	2.42	4.84
29 cts. per 100 lbs. for light goods .....	3.00	6.00

We shall give the remainder of the Report, except the tables, in our next number.



## 294 AMERICAN RAILROAD JOURNAL, AND

## Report on the Progress and Present State of our Knowledge of Hydraulics as a Branch of Engineering. By GEORGE RENNIE, Esq., F. R. S., &amp;c. &amp;c. Part I.

(Continued from number 3.)

In the year 1801, M. Eytelwein, a gentleman well known to the public by his translation of M. Dubuat's work into German, (with important additions of his own,) published a valuable compendium of hydraulics, entitled "Handbuch der Mechanik und der Hydraulik," in which he lays down the following rules:

1. That when water flows from a notch made in the side of a dam, its velocity is as the square of the height of the head of the water; that is, that the pressure and consequent height are as the square of the velocity, the proportional velocities being nearly the same as those of Bossut.

2. That the contraction of the fluid vein from a simple orifice in a thin plate is reduced to 0.64.

3. For additional pipes, the co-efficient is 0.65.

4. For a conical tube, similar to the curve of contraction, 0.99.

5. For the whole velocity due to the height, the co-efficient by its square must be multiplied by 8.0458.

6. For an orifice, the co-efficient must be multiplied by 7.8.

7. For wide openings in bridges, sluices, &c., by 6.9.

8. For short pipes, 6.6.

9. For openings in sluices without side walls, 5.1.

Of the twenty-four chapters into which M. Eytelwein's work\* is divided, the seventh is the most important. The late Dr. Thomas Young, in commenting upon this chapter, says:

"The simple theorem by which the velocity of a river is determined, appears to be the most valuable of M. Eytelwein's improvements, although the reasoning from which it is deduced is somewhat exceptionable. The friction is nearly as the square of the velocity, not because a number of particles proportional to the velocity is torn asunder in a time proportionally short—for, according to the analogy of solid bodies, no more force is destroyed by friction when the motion is rapid, than when slow—but because, when a body is moving in lines of a given curvature, the deflecting forces are as the squares of the velocities; and the particles of water in contact with the sides and bottom must be deflected, in consequence of the minute irregularities of the surfaces on which they slide, nearly in the same curvilinear path, whatever their velocity may be. At any rate, (he continues,) we may safely set out with this hypothesis, that the principal part of the friction is as the square of the velocity, and the friction is nearly the same at all depths; for Professor Robison found that the time of oscillation of the fluid in a bent tube was not increased by increasing the pressure against the sides, being nearly the same when the principal part was situated horizontally, as when vertically. The friction will, however, vary, according to the surface of the fluid which is in contact with the solid, in proportion to the whole quantity of the fluid; that is, the friction for any given quantity of water will be as the surface of the bottom and sides of a river directly,

and as the whole quantity in the river inversely; or, supposing the whole quantity of water to be spread on a horizontal surface equal to the bottom and sides, the friction is inversely as the height at which the river would then stand, which is called the hydraulic mean depth."† It is, therefore, calculated that the velocities will be a mean proportional between the hydraulic mean depth and the fall, or  $\frac{1}{16}$ ths of the velocity per second.

Professor Robison informs us, that by the experiments of Mr. Watt on a canal eighteen feet wide at the top, seven feet at the bottom, and four feet deep, having a fall of four inches per mile, the velocities were seventeen inches per second at the surface, fourteen inches per second in the middle, and ten inches per second at the bottom, making a mean velocity of fourteen inches per second; then finding the hydraulic mean depth, and dividing the area of the section by the perimeter, we have  $\frac{50}{20.6}$ , or 29.13 inches; and the fall in

two miles being eight inches, we have  $\sqrt{8 \times 29.13} = 15.26$ , for the mean proportional  $\frac{1}{16}$ ths, or 13.9 inches, which agrees very nearly with Mr. Watt's velocity.

The Professor has, however, deduced from Dubuat's elaborate theories, 12.568 inches. But this simple theorem applies only to the straight and equable channels of a river. In a curved channel, the theorem becomes more complicated; and, from observations made in the Po, Arno, Rhine, and other rivers, there appears to be no general rule for the decrease of velocity going downwards. M. Eytelwein directs us to deduct, from the superficial velocity,  $\frac{1}{16}$  for every foot of the whole depth. Dr. Young thinks  $\frac{1}{16}$ ths of the superficial velocity sufficient. According to Major Rennell, the windings of the river Ganges, in a length of sixty miles, are so numerous as to reduce the declivity of the bed to four inches per mile, the medium rate of motion being about three miles per hour, so that a mean hydraulic depth of thirty feet, as stated to be  $\frac{1}{3}$ ds of the velocity per second, will be 4.47 feet, or three miles per hour. Again, the river, when full, has thrice the volume of water in it, and its motion is also accelerated in the proportion of 5 to 3; and, assuming the hydraulic mean depth to be doubled at the time of the inundation, the velocity will be increased in the ratio of 7 to 5; but the inclination of the surface is probably increased also, and consequently produces a further velocity of from 1.4 to 1.7. M. Eytelwein agrees with Gennete,† that a river may absorb the whole of the water of another river, equal in magnitude to itself, without producing any sensible elevation in its surface. This apparent paradox Gennete pretends to prove by experiments, from observing that the Danube absorbs the Inn, and the Rhine the Mayne, rivers; but the author evidently has not attended to the fact, as may be witnessed in the junction of rivers in marshes and fenny countries—the various rivers which run through the Pontine, and other marshes, in Italy, and in Cambridgeshire and Lincolnshire, in this country; hence, the familiar expression of the waters being overridden, is founded in facts continually observed in these districts. We have also the experiments of Brunings, in the "Architecture Hydraulique Generale de Wiebeking," Watzmann's "Memoires sur l'Art de construire

les Canaux," and Funk "Sur l'Architecture Hydraulique Generale," which are sufficient to determine the co-efficients under different circumstances, from velocities of  $\frac{1}{3}$ ths to  $\frac{1}{7}$ ths feet, and of transverse sections, from 1 to 19135 square feet. The experiments of Dubuat were made on the canal of Jard, and the river Hayne; those of Brunings, in the Rhine, the Waal, and Ifrel; and those of Watzmann, in the drains near Cuxhaven.

M. Eytelwein's paper contains formule for the contraction of fluid veins through orifices,\* and the resistances of fluids passing through pipes, and beds of canals and rivers, according to the experiments of Couplet, Michelotti, Bossut, Venturi, Dubuat, Watzmann, Brunings, Funk, and Bidone.

In the ninth chapter of the "Handbuch," the author has endeavored to simplify, nearly in the same manner as the motion of rivers, the theory of the motion of water in pipes, observing that the head of water may be divided into two parts, one to produce velocity, the other to overcome the friction; and that the height must be as the length and circumference of the section of the pipe directly, or as the diameter, and inversely as the area of the section, or as the square of the diameter.

In the allowance for flexure, the product of its square, multiplied by the sum of the sines of the several angles of inflection, and then by .0038, will give the degree of pressure employed in overcoming the resistance occasioned by the angles, and deducting this height from the height corresponding to the velocity, will give the corrected velocity.†

M. Eytelwein investigates, both theoretically and experimentally, the discharge of water by compound pipes, the motions of jets, and their impulses against plane and oblique surfaces, as in water wheels, in which it is shown that the hydraulic pressure must be twice the weight of the generating column, as deduced from the experiments of Bossut and Langsdorf; and in the case of oblique surfaces, the effect is stated to vary as the square of the sine of the angle of incidence; but for motions in open water, about  $\frac{1}{3}$ ths of the difference of the sine from the radius must be added to this square.

The author is evidently wrong in calculating upon impulse as forming part of the motion of overshot wheels; but his theory, that the perimeter of a water wheel should move with half the velocity of a given stream, to produce a maximum effect, agrees perfectly with the experiments of Smeaton, and others.‡

\* "Recherches sur le Mouvement de l'Eau, en ayant egard a la Contraction qui a lieu au Passage par Divers Orifices, et a la Resistance qui retarde le Mouvement, le long des Parois des Vases; par M. Eytelwein."—Memoires de l'Academie de Berlin, 1814 and 1815.

† Hence, if  $f$  denote the height due to the friction,  $d$  = the diameter of the pipe,  $W$  = a constant quantity,  $WW$

we shall have,  $f = V^2 \frac{a}{d}$  and  $V^2 = \frac{f d}{a}$

But the height employed in overcoming the friction corresponds to the difference between the actual velocity and the actual height; that is,  $f = h - \frac{V^2}{b^2}$ , where  $b$  is the co-efficient for finding the velocity from the height.

Hence we have,  $V^2 = \frac{b^2 d h - d V^2}{a b^2 d}$  and  $V = \sqrt{\frac{b^2 d h}{a b^2 d + d}}$

Now Dubuat found  $b$  to be 6.6, and  $a b^2$  was found to be 0.011, particularly when the velocity is between six and twenty-four inches per second. Hence we have,

$V = \frac{43.6 d h}{0.011 d + d}$  or  $V = 45.5 \sqrt{\frac{d h}{d + 50 d}}$  or more accurately,  $V = 50 \sqrt{\frac{d h}{d + 50 d}}$

‡ The author of this paper has made a great many experiments on the maximum effect of water wheels.

\* See Nicholson's translation of Eytelwein's work.

† See my "Experiments on the Friction and Resistance of Fluids," Philosophical Transactions for 1831.

\* See Nicholson's Journal for 1802, vol. iii., p. 31.

† Experiences sur le Cours des Fleuves, ou Lettre a un Magistrat Hollandais, par M. Gennete. Paris, 1760.



The author concludes his highly interesting work by examining the effects of air, as far as they relate to hydraulic machines, including its impulse against plane surfaces, on syphons and pumps of different descriptions, horizontal and inclined helices, bucket wheels, throwing wheels, and, lastly, on instruments for measuring the velocity of streams of water. A very detailed account of the work was given in the *Journal of the Royal Institution*, by the late Dr. Young. But it is due to MM. Dubuat and Prony to state, that M. Eytelwein has exactly followed the steps of these gentlemen, in his "Theory of the Motion of Water in Open Channels."

[To be continued.]

[From the London Mechanics' Magazine.]

**Gun with a Revolving Breech—Simple Mode of Increasing the Tractive Power on Roads—Relief-wheels for Common Road Steam-Carriages.**

Sir: The following matters are submitted for insertion in your truly valuable publication, should you deem them deserving a place in it.

I am, Sir, your obedient servant,

ROBERT CAREY,  
Rector of Donoughmore.

1. The first invention to which I would call your attention is a gun with a revolving breech, containing seven chambers, brought in succession into position, by the single movement of elevating the hammer. I sent it to the exhibition of Irish Manufactures and Inventions, held at the Royal Dublin Society, in May, 1834, where it still remains. It is thus described in the *Dublin Evening Packet*, of the 22d of May: "In our last notice of this exhibition we described a gun with a revolving breech, capable of being discharged seven successive times within a space of from 25 to 30 seconds; we have just learned that the inventor is a clergyman, living in the county of Tipperary, and that the gun was manufactured in the town of Clonmell." I would here observe, that it has been suggested to me by military persons that the principle of the above invention would apply with great effect to cannon.\*

2. I would in the next place submit a project directed to the increase of power applied to draught.

The means which I would suggest for the attainment of this object are a new formation of road, by which wheels of any diameter, that it may be found convenient to use, are rendered applicable to draught, without destroying the proper direction of the line of traction. I propose to give what I shall term the power-road (or that on which the power moves, whether it be steam or otherwise,) an elevation above the waggon-road (or that on which the train of carriages moves,) proportioned to the magnitude of the

but the recent experiments of the Franklin Institution, made on a more magnificent scale, and now in the course of trial, eclipse every thing that has yet been effected on this subject. See also Poncelet, "Memoire sur les Roues Hydrauliques," and "Anbes Courbes par dessous, &c." 1837.

\* We should be glad to receive from our worthy correspondent a more particular description of this ingenious invention. A drawing is also very desirable.—[Ed. M. M.]

wheels which it may be found most advantageous to use. Assuming that the power attained from the application of wheels of different magnitudes, moving on ordinary roads, varies in the direct ratio of their semi-diameters, an elevation of three feet in the power-road would double the power, inasmuch as it would render applicable wheels of double the diameter that would apply with effect on an ordinary road. I am aware the advantage obtained on a railroad, by the application of this principle, is not so considerable; I calculate that the comparative powers of wheels of different magnitude, on a railroad, vary as the square roots of the semi-diameter of the wheels. An obvious advantage, exclusive of the increase of power, resulting from the above construction of road, would be its rendering an upset impossible.

3. The next project I would submit is directed to obviate an inconvenience (much dwelt on in a late number of your publication,) resulting to carriages impelled by steam, and moving on common turnpike-roads, from the inequalities or ruts of unavoidable occasional occurrence in roads composed of ordinary materials. I would have each axle furnished with two wheels additional, and exterior to the main wheels, and of somewhat smaller diameter. These additional I shall term relief-wheels. The effect of this contrivance must, I conceive it is obvious, be, to relieve the carriage from any shock from inequalities in the road, except when a depression or rut presents itself at the same moment to a main wheel and corresponding relief-wheel, which, it is obvious, except on roads in total disrepair, would be of extremely rare occurrence.

I beg to apologise for the extent to which this communication reaches, and am, Sir, your obedient servant,

R. C.

Donoughmore Glebe, Clonmell,  
25th Jan., 1835.

[From the Journal of the Franklin Institute.]

**List of American Patents which issued in September, 1834.**

1. For a Perpetual Shoe Bench; Samuel Haynes, Malden, Middlesex county, Massachusetts, September 1.
2. For an improvement in navigation, called the Cylinder Boat; Amos Kendall, city of Washington, District of Columbia, September 2.
3. For a Thrashing Machine; Israel Lukens, Upper Dublin, Montgomery county, Pennsylvania, September 2.
4. For an improvement in the application of steam to the purpose of cooking, called the Steam Baker; Charles F. Wilcox, Springfield, Hampden county, Massachusetts, September 3.
5. For machinery for Cutting Crackers; Lucius Kirtland, New Haven, New Haven county, Connecticut, September 4.
6. For an improved press, for Pressing Cheese; Elijah Barnes, North Brookfield, Worcester county, Massachusetts, September 5.

7. For a machine for Hulling Barley; Henry Handschey, Bridgeville, Muskingum county, Ohio, September 5.

8. For Wheels for Carriages, &c.; Barney Ruggles, Warsaw, Genesee county, New-York, September 8.

9. For a Shoe for Mill Cans; James Dennis, Providence, Rhode Island, September 8.

10. For a Circular Saw Mill; John Penman, Charlotte, Muhlenburg county, North Carolina, September 9.

11. For Lessening Friction, by friction rollers; Isaac Clowes, Norfolk, Norfolk county, Virginia, September 9.

12. For improvements in Locomotive Engines and Cars, for Railroads; Matthias W. Baldwin, Engineer, Philadelphia, September 10.

13. For a Brick Machine; Cyrus Chaney, North Prospect, Waldo county, Maine, September 11.

14. For a Stove; James Wilson, city of New-York, September 12.

15. For an improvement in the Horse Collar Block; Dyer Cleaveland, Owego, Tioga county, New-York, September 13.

16. For a Relief Bedstead, for the use of invalids; David Anthony, Adams, Berkshire county, Massachusetts, September 13.

17. For a new Material for Stuffing Mattresses; Elias Howe, Cambridge, Middlesex county, Massachusetts, September 13.

18. For an improvement in the construction of Water Cisterns; Obadiah Parker, Syracuse, Onondaga county, New-York, September 15.

19. For an improved Re-action Water Wheel; John L. St. John, Canajoharie, Montgomery county, New-York, September 16.

20. For a Handling Machine, to be used in the manufacturing of Leather; William G. Waterman, Sullivan, Madison county, New-York, September 16.

21. For an improvement in the form and construction of Gridirons; Fenner Bush, and Linus Pratt, Meriden, New-Haven county, Connecticut. First patented July 21st, 1832. Patent surrendered, and re-issued upon an amended specification, September 17.

22. For a Straw Cutter; Nimrod Murphree, Nashville, Davidson county, Tennessee, September 17.

23. For Sun Dials of Cast Iron; Herman M'Cluer, Hamburg, Erie county, New-York, September 17.

24. For a Horse Power; Sewall Gleason, Westville, Franklin county, New-York, September 18.

25. For a Rotary Steam Engine; William Sutton, Geneva, Ontario county, New-York, September 18.

26. For a Churn; Adna L. Norcross, Hallowell, Kennebec county, Maine, September 19.

27. For Shears for Cutting Metal; George Christian, Mentz, Cayuga county, New-York, September 20.

28. For an improvement in the Forcing Pump; James D. Egbert, Lansing, Tompkins county, New-York, September 22.

29. For a Horse Power; Silvanus



Leonard, Hampton, Penobscot county, Maine, September 23.

30. For an improvement in the Cast Iron Fireplace; Ansel Hayward, Easton, Bristol county, Massachusetts, September 25.

31. For an improvement in the Dress of Mill Stones; Isaac W. Elmore, Lyons, Wayne county, New-York, September 25.

32. For a machine for Thrashing and Cleaning Grain, and for Shelling Corn; David Knauer, East Nantmeal, Chester county, Pennsylvania, September 25.

33. For a Centripetal Power Press; Eliphalet S. Scripture, Cazenovia, Madison county, New-York, September 26. [See page 157, vol. viii., of the New-York Farmer.]

34. For Water Wheels; Garet H. Heermance, Coxsackie, Greene county, New-York, September 30.

35. For an improvement in Stoves for Burning Anthracite; William A. Hopkins, city of New-York, September 30.

36. For a Tin Baker; Josiah St. John, Hudson, Columbia county, New-York, September 30.

#### ROTARY STEAM ENGINE.

The following inquiries have been addressed to Mr. N. Felt, who has recently substituted one of Avery's Rotaries, for a common high pressure piston engine, in his saw-mill, in Clay, to which the answer annexed has been furnished. We recommend the correspondence to the attention of machinists.

We extract the inquiries from a letter to Mr. F. from E. Lynds & Son.

"1st. Have you made any alterations in your boiler, in any form or manner, since putting the rotary in use, so as to afford more steam with less fuel?"

"2d. Is there any difference in the amount of fuel required to perform an equal amount of labor with either of the engines? If so, which requires the least, and what is the difference in the quantity used?"

"3d. Does the rotary engine do more or less work, in the same time, than the piston engine? What is the amount of difference?"

"4th. Which engine do you conceive to be the most simple in its construction, and in its application to any mechanical purpose the most natural? Also, which is kept in repair with the least expense?"

"5th. If you were to put another mill into operation, which engine would you prefer; and which do you think the most valuable for any mechanical purposes?"

From Mr. Felt, to Messrs. Lynds.

Clay, May 1, 1835.

"GENTLEMEN,—It is with pleasure I comply with your request in giving my opinion (founded upon practice and short experience,) in relation to the difference between the former High Pressure and Avery's Patent Rotary Engine, which I now have in operation in my saw-mill.

"In answer to your first question, I would say I have made no alteration in my boilers or arches.

"2d. As to the amount of fuel required, I am not able to answer precisely, but am sure the rotary does not require more than two-thirds the quantity to put it in operation the piston engine required.

"As to the amount of business performed, the rotary will do double the amount of the piston engine in the same time. So far as I

am acquainted with the two engines, I consider the rotary the most simple in its construction and application to mechanical purposes, and I think is kept in order with the least expense. With the experience I have with the two engines, I should prefer the rotary for any mechanical purposes whatever.

"Respectfully yours,

"NORRIS FELT.

"Elam Lynds & Son."

BROOKLYN—Our Sister City.—The Brooklyn Evening Advertiser contains the following remarks:—

The public exercises of the Brooklyn Lyceum were closed for the season on Friday evening. A lecture on the *Improvement of Brooklyn*, was given by Major Douglass, in which were set forth the advantages with which we have been favored by nature and circumstances, especially as to location, prospect, &c.—advantages which, if early improved, and on an enlarged and liberal scale, would make this the most splendid and attractive city in the country, if not in the world; but which, if neglected, may compel us to take the place of humble mediocrity, or perhaps debasement. Several particulars were enumerated, which deserved immediate attention; among which was a proper arrangement of the City Plot. On this, the lecturer said depended convenience, health, and beauty. A brief view of the original plan, subsequent alterations, and present arrangement of some of the European cities was given, particularly Paris, which at first occupied only the island upon which the Cathedral now stands; and it was thence argued that a predetermined plan, if properly matured, was preferable, even on the score of economy, to one that should be subjected to the particular interests or caprice that might prevail at different periods; and it was intimated that the same exercise of authority and amount of expenditure which were required to bring the plan of Paris to its present state of perfection, would hardly be submitted to in this country. A fixed adherence to straight lines, it was contended, was opposed to convenience, economy and good taste. The city of Philadelphia was instanced; a part of Market street was the great centre of business, with respect to which, Fairmount and Kensington were situated diagonally. Suppose, according to the present rectangular arrangements of the streets, 300 horses are required to be employed in transportation between the centre of business and the two places named, one third of the number might be dispensed with if the communication were correct. The preservation of elevations and depressions was urged as indispensable both to health and beauty. The present dead level of the city of New York was often spoken of by foreigners and others as a great defect, and they could hardly be made to believe that elevations once existed, and that they were all given to the destroyer. The proper graduation of streets, the laying out sites for the public buildings and public walks, the necessary damage, &c., were successively touched upon, and due attention to them urged. The improvements of the Heights, which had become almost as noted as the famed Cliffs of Dover, or (the lecturer was about to say) the Peak of Teneriffe, was considered the first object in the embellishment of the city; all the projected plans for regulating and beautifying these grounds, to which reference was made in this paper a few days since, was briefly explained. Our external intercourse was next adverted to. A direct communication, with Boston, by means of a railroad across the Island, and with Philadelphia, by means of steamboats, &c., was deemed feasible and of much importance. The intercourse with New York it was thought, would soon render necessary some other facilities of passage than the ferries afforded. It was even now often rendered difficult, if not dangerous, to the ladies and to the aged, by the crowded state of the boats, and of the avenues leading to them. A bridge across the river had been at one time in contemplation, but (the lecturer said) from the attention which he had given to the subject, he was convinced, that though such a project might not be impracticable, it could not be undertaken to any good purpose. He had no hesitation in saying, however, that a safe and easy communication, by means of an arch, or tunnel (if we mistake not,) was not only possible, but perfectly feasible.

THE ERIE CANAL.—The following important act was passed by the late Legislature, and a meeting of the Canal Board, with reference to the gigantic work therein contemplated, is advertised for the 30th June:—

An Act in relation to the Erie Canal, passed May 11, 1835.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

§ 1. The canal commissioners are hereby authorized and required to enlarge and improve the Erie Canal, and construct a double set of locks therein, as soon as the canal board may be of opinion that the public interest requires such improvement.

§ 2. The dimensions to which the canal and locks shall be enlarged shall be determined by the canal board.

§ 3. In passing cities or villages and at other places, an independent canal may be constructed instead of enlarging the present works, if the canal board shall decide that the public interests will be thereby promoted. In all cases, regard shall be had in the location, to the relinquishment of damages, and to gifts, grants and donations; but nothing in this section shall authorize the board to abandon the present canal through cities or villages, where an independent canal may be deemed advisable.

§ 4. It shall be the duty of the canal commissioners to alter and arrange the present feeders, and to construct such additional feeders and other works as they may deem necessary for supplying the enlarged canal with water.

§ 5. In the construction of the several works authorized by this act, the canal commissioners shall have and exercise all the powers and privileges granted to them by the ninth title of chapter ninth of the first part of the revised statutes: And the said ninth title, so far as it may be applicable, shall apply to the works hereby authorized.

§ 6. The cost of constructing, completing, and maintaining the works authorized by this act, shall be paid by the commissioners of the canal fund out of any moneys which may be on hand belonging to the Erie and Champlain canal fund; but the accounts and expenditures under this act shall be kept separate and distinct from the accounts and expenditures for the ordinary repair and maintenance of the Erie canal.

§ 7. The eighth section of the act entitled "an act to provide for the improvement of the canals of this state," passed May 6, 1834, is hereby repealed.

§ 8. The commissioners shall report to the legislature their proceedings under this act, within thirty days after the commencement of each session.

§ 9. After the year one thousand eight hundred and thirty-seven, the expenditures by virtue of this act shall be so limited as to leave from the canal revenues without reference to auction and salt duties, an annual income to the State of at least three hundred thousand dollars, over and above all ordinary repairs and expenditures on the Erie and Champlain canals.

§ 10. No further expenditures shall be made pursuant to the provisions of this act than are necessary to construct the additional locks and works connected therewith, to enlarge the canal in the vicinity of said locks, so far as may be necessary to facilitate the passage of boats through the same, and for the purchase of such lands and the extinguishment of such claims for damages, as the commissioners may deem it expedient to secure and extinguish, until a sufficient sum shall have been collected and invested from the canal revenues fully to discharge the Erie and Champlain canal debt.

§ 11. This act shall take effect on the passage thereof.

[From the Albany Journal of last evening.]

CANAL BOAT SUNK.—A canal boat belonging to the Troy and Erie line, with thirty-five tons of merchandise, was last week, by an unavoidable accident, sunk, a few miles west of Schenectady. Much of the freight being of a perishable character, the loss, we regret to learn, will be considerable. It is fortunate, however, for those who owned the goods, that the proprietors of the line which shipped them, are abundantly responsible, and will pay the entire loss as soon as the amount shall have been ascertained.



**LONG ISLAND RAILROAD.**—We learn that nearly two millions of Dollars were subscribed for the Stock of this Company, being an excess of half a million over the capital. The books were also opened in Kings, Queens and Suffolk counties, where it is supposed that upwards of half a million more of Stock will be subscribed. It is certain therefore, we presume, that this work will be speedily completed.

**AUBURN AND SYRACUSE RAILROAD.**—Extract of a letter from Auburn, dated May 6:—

"Yesterday the Engineer, Mr. Johnson, returned here, and is very favorably impressed from the experiment made in running the first line. He made the distance 26 1-2 miles—at no place a declivity of more than 31 feet to the mile. The ground is feasible and the surface favorable the whole distance, and the work can be accomplished at a less expense per mile, than the Utica and Schenectady Railroad. You are aware that this is necessarily a part of the great railroad which will be continued from Utica to Lake Erie, but you may not know, that the charter confers the privilege of transporting goods, as well as passengers."

**BUFFALO AND DUNKIRK.**—On the 8th of April, Dunkirk, the proposed termination of the New York and Erie Railroad, was free from ice. On the 8th of May only, as will be seen by the annexed article from the Buffalo Evening Advertiser of that date, was the Buffalo harbor free from ice. A difference of one month!

[From the Buffalo Commercial Advertiser.]

Our Marine List affords a gratifying evidence, that the siege has at last been raised which has for months so effectually embargoed our steamboats, brigs, schooners, &c. Last evening, the steamboat Ohio made a demonstration against the besieging enemy, and ascertained the practicability of a passage, and this forenoon a gallant squadron of between thirty and forty sail, left port in fine style, before an easterly breeze.

Several arrivals have already been made, and we may expect a fleet of the canvassed winged messengers of commerce, with the first favorable wind.

**Erie Canal.**—We understand that about two hundred boats have been detained for a day or so, at a section of the Canal about eight miles east of Lockport, in consequence of the water having been drawn off from that portion for the purpose of making repairs at a spot where a breach was apprehended. We are informed by a gentleman arrived this morning from Lockport, that the Superintendent stated the repairs would be completed to-morrow, and the water again be let in to-morrow morning.

[From the Buffalo Commercial Advertiser, May 7th.]

The steamboat Sandusky, which started from the landing at Black Rock yesterday, on her return trip to Detroit, was surrounded by the floating ice in the river, and finding herself unable to force her way against the overwhelming power of the descending masses, was carried down as far as the head of Grand Island, where she brought up, with the loss of both anchors. She last evening proceeded on her way up the Lake.

**A Bull Fight with Steam.**—A few days since, as the locomotive steam engine was passing along the Columbia Railroad, the engineer espied a noble bull driving across the field, apparently to give battle to the machine. He was coming at the top of his speed, his tail stuck right into the air, and his head down, as if for immediate attack. As the bull errant rushed onward, the director checked the car, and received the blow upon the front wheel.—The animal recoiled several steps—the puffing of the steam pipe seemed to challenge him to a second onset, and on he came, bellowing and tearing up the earth, while his eyes seemed to shoot forth baleful fire. The engineer thought that his safety consisted in moving—he therefore put on the whole head of the accumulated steam, and the car started like the wind. The enraged beast struck short of his aim, he missed his footing, and rolled down a high embankment, to the infinite gratification of those who had watched his behaviour, and to the glory of the engineer.—[U. S. Gazette.]

**Steam Engines.**—Among the contracts which Mr. Philips, one of our Engine builders, is now filling, (says the Wheeling Gazette) is one from Cheraw, South Carolina, for an engine to be used on the Pee Dee river. What a train of thought is here opened to the mind;—a town in the West, which a few years ago contained but a handful of inhabitants, now furnishing steam engines to the southernmost parts of this wide union! The one spoken of can be sent to its place of destination either by way of New Orleans or Baltimore. If by the former, the freight will be half a cent per pound—insurance one per cent, on the cost; if by Baltimore, it will be taken from here in wagons on the national road, at a charge of one cent per pound—no insurance. The whole cost of delivering it in Cheraw, it is supposed, will be 400 dollars, making the cost of the engine there about four thousand, and saving to its owners from 500 to 1000 dollars over one obtained from the Atlantic workshops.

**Steamers to New York.**—We understand that Dr. Church, of this town, has recently proceeded to Liverpool with models of his engine and boiler, for the purpose of submitting them to several eminent practical engineers of that place; and we are informed that so decided is the opinion there of their applicability to marine purposes, that a company is in course of formation to establish a line of steam packets, to be worked by them between that port and New York, and that it is confidently expected the passage will be made in ten or twelve days.—[Birmingham Gaz.]

**Improvements in Greece.**—An iron Railway has been contracted for, by the Greek government, with the banker Feraldi, to run from Athens to the Piræus. Shade of Themistocles, look down!

**New Invention.**—Capt. E. Larkin of St. John, has invented a machinery, simple in its construction, and that can at a very small expense, be attached to the rudder of any vessel, that will on a dial at the rudder head, show the distance the ship has sailed and only the actual distance, for if the ship should at any time go astern, the distance so gone astern is taken off the dial, and the true distance gone ahead only is shown. Should it answer the purpose anticipated, it will be a great benefit gained in navigation, as at times it is of the greatest importance to know the distance sailed; for instance, having a given distance to run in a fog at night, it may be done with safety—this machinery giving the true and absolute distance, which has not yet been ascertained with certainty by any method, with the simplicity of this invention; as much depends in the usual method on judgment, the steadiness of the wind, and the state of the atmosphere acting on canvass having in ordinary cases great effect on the rate of sailing, in both of which cases the judgment is very liable to error; this machinery invented and exposed to the action of the wind, instead of the water, would at any time with equal accuracy give the velocity of the wind; the neatness and compact state of the invention, does much credit to Capt. LARKIN'S ingenuity and mechanical talent.—[St. John. N. B. Courier.]

[From the New-England Farmer.]

#### Manufacture of Axes by New Modes.

Mr. Fessenden,

Dear Sir: If you think it an object, as I do, to show the ingenuity of Yankees in competing with foreign nations by their inventions and labor-saving machines, the following is at your service. It will afford new evidence of the onward march of improvement.

WILLIAM KENRICK.

Being lately at Douglas, Mass., I was invited by my friend, Griffin Clark, Esq. of that place, to visit the Manufactory of Axes, belonging to Messrs. Hunt & Co. At this establishment, about 500 axes and hatchets are manufactured in a day, of all descriptions, and of the most beautiful and perfect workmanship, and chiefly by a new mode. Besides adzes, and a variety of other species of edge tools, I noticed the Pittsburg broad-axe; it is not deep, but the broadest of all I have ever seen; the edge straight, and about sixteen inches in its width; its form resembles the ship-carpenter's axe,

The Kentucky axes differ from our chopping axes, only in being heavier, and having a very long bit. The chopping axes and all of larger size are formed in the usual way by doubling the iron; but all of a smaller description are formed by a new and more expeditious mode. Bars of cold iron, about an inch thick and four inches wide, more or less, according to the size of the intended axe, or hatchet, are cut into suitable lengths with ponderous shears.

These pieces being cast into the forge and brought to the required heat, are cleft at one end, and into this cleft a tongue of cast steel is inserted; then being again heated, the complete union of the iron and steel is effected with the hammer. These being subjected anew to the fire, are laid on edge in a mould, and a single and powerful blow, or pressure of an engine, completes the profile of the small broad-axe or hatchet, and this blow being repeated a second time, renders the outline still more perfect. They are next transferred to another engine, furnished with a die; in this the axe is laid, and a heavy weight of iron similar in size to those employed in driving piles, being drawn up suddenly by water power, completes the form of the axe by its fall.

Another engine is about going into use, which will give to the rough and oblong section of a bar of iron the form of a perfect and beautiful axe or hatchet at a single and instantaneous operation. Thus are these instruments formed; but the eye for the insertion of the handle is made by boring through the cold and solid iron. The axe being fixed in a firm position above, a vertical drill of species of auger perforates them from below. This auger has a three-fold motion. First, a revolving motion on its own centre. Second, it moves in an orbit, which is that of a very eccentric ellipsis, corresponding with the form of the eye. Third, a vertical or upward motion at intervals, and at each time it has completed a revolution in its orbit.

An axe is bored in about twenty minutes; and one man will attend to twenty-five augers or axes; and another man is sufficient to sharpen the drills or instruments for the same.

Respectfully, your friend and obedient servant,  
W. K.

**WHEAT CROPS DESTROYED BY FIELD-MICE IN FRANCE.**—From Angerville, it is stated that the ten bad crops which have occurred during the last fifteen years have almost ruined our cultivators, and have caused many farms to be tenantless, the occupiers returning them on the hands of the landlords as the leases fall in. One proprietor alone in this district has now five or six farms in this predicament. The cause of all this distress is attributed to the field mice. They devastate every spot, and this year they have invaded fresh districts, and some growers have delayed sowing their wheat till spring, there being no chance of protecting it from these vermin; and in such cases the mice have forsaken the fields where they could not find subsistence, to prey on the seed in situations where such precaution had not been used.

**VALUE OF HOPS IN DISEASES OF THE SKIN.**—One of the best external applications for many eruptive diseases of the skin is a strong decoction of Hops, in which the limbs or other affected parts are to be bathed several times a day. The decoction should not be used until it has become perfectly cold. In bad ulcers of the leg, the most satisfactory results have been repeatedly realized from this simple preparation.—[Med. Intel.]



(From the Journal of the Franklin Institute.)

#### DETECTION OF ADULTERATIONS IN FLOUR.

M. Dubuc, senior, of Rouen, has applied himself with success to the detection of farinaceous mixtures in wheat flour. The principal substances with which flour is adulterated are potato starch, a secula; beans, barley, chalk, plaster of Paris, &c. An extract from his memoir is published in the last Bulletin of the Society of Encouragement, from which the following is taken.

There are two methods of detecting adulterated flour, mechanical and chemical. In France the adulteration is principally with potato starch, as it renders the bread whiter and heavier. If there be more than ten per cent. of potato starch, it may be detected by the naked eye, or with the aid of a magnifying glass; the secula is whiter, the particles are angular, and reflect the rays of light, like minute crystals. To render the discovery more easy, M. Dubuc dries the suspected flour in a sand bath, at 100° to 110° of Fahrenheit; and then, with a good magnifying glass, so small an adulteration as five per cent. may easily be detected.

But if the miller has been cunning enough to grind the potato starch with the wheat, other means of detection must be had recourse to.

The first is, from the great difference between the specific gravity of wheat flour and potato starch.

The second is, that flour contains a certain per centage of *gluten*, and the starch does not contain an atom of gluten.

**First Method.**—A vessel that will contain one pound of flour, gently pressed down, will contain a pound and a half of *fecula*; from these data the relative portions of flour and *fecula*, in any parcel of flour, may be easily ascertained very near the truth.

**Second Method.**—The best flour contains about twenty per cent. of gluten, and, as we have stated, the starch not an atom.

**Experiment.**—Take five ounces of pure wheat flour, and two ounces and a half of warm water; mix and work it well for about ten minutes; the paste will be firm and elastic. Let a little warm water fall continually upon it, while you continue to knead it; by this means, all the starch and saccharine mucilage will be extracted. The operation is finished when the water flowing from it ceases to be white; what remains is gluten, the weight of which will be about one ounce. If the flour be adulterated, the paste will be more liquid, less cohesive, and less elastic, and an intelligent baker will soon be able to discover to what extent the flour has been adulterated, from the appearance of the paste, &c.

Such are the mechanical means that may be employed with success.

**Employment of Chemical Agents to discover Frauds in Flour.**—It will be well to bear in mind, that wheat flour is an animalized azotic matter, (*matiere animalisee azotee*), and that, on the contrary, *fecula*, or the starch extracted, pure from cere-

als, is entirely of a vegetable nature: from this difference results the varied effects of the re-agents employed.

The three chemical tests which have been found best for general use, are nitric and muriatic acid, and the liquid nitrate of mercury, (*deuto nitrate*.) Their chemical effects on flour and *fecula* are as follows:

1. Nitric acid has the property of coloring wheat flour of a fine orange yellow, whereas it neither affects the color of *fecula* nor starch.

2. Pure muriatic acid colors good wheat flour of a deep violet, but dissolves *fecula* and starch, and forms with it a light, colorless, viscous fluid, decomposable by alkalies.

**Experiments with Nitric Acid of 40°.**—Take 100 grains of pure wheat flour, pour on it 100 grains of nitric acid, (aqua fortis,) in a small earthen or China cup, stirring it with a glass tube, it will heat a little, and in a few hours it will change color from yellow to a fine orange color.

Take 100 grains of *fecula*, and pour on it 100 grains of nitric acid; heat it in every respect the same as above, but no caloric will be evolved, and the mixture will not change color.

Take of flour 80 grains, and of *fecula* 20 grains, and of acid 100 grains; mix well; the color will now be much paler, and of a light citron color. Take 50 grains of flour, and 50 grains of *fecula*, and 100 grains of acid; mix well; the color is now much paler than before, so that, with a little practice, the quantity of *fecula* may be detected by the greater or less intensity of colors.

**Experiments with Muriatic Acid of 21 Degrees of Strength.**—Take of wheat flour and acid, each 100 grains; mix well; the color will become at first red, then violet, and finish by becoming of a beautiful indigo color. This operation is accelerated if a gentle heat be applied.

Take 100 grains of *fecula*, and 100 grains of acid; the mixture is at first of the consistency of paste, and then becomes liquid; the *fecula* is dissolved, and the solution colorless.

On varying the proportions of flour and *fecula*, we shall soon be able to ascertain the quantity of *fecula* in a sample of suspected flour.

**Experiment in the Liquid Nitrate of Mercury.**—Take of flour and nitrate each 100 grains; mix well with a glass tube or rod. The paste will at first be of a pale citron, then reddish, and in three hours will become a full red. The color is permanent.

Take 100 grains each of *fecula* and nitrate; they will not combine, nor will the color of the *fecula* or starch be acted upon.

By mixing flour and *fecula* in different proportions, and observing the colors, we may soon be able to detect the proportions in which flour is adulterated by *fecula* or starch.

It may also be observed, that *fecula* absorbs less water than flour, which affords a ready means of detection.

The adulteration with bean or pea flour may be detected by pouring boiling water upon it, which develops the peculiar smell of these two substances.

We may add, that the adulteration with chalk, or gypsum, may be detected by pouring a diluted acid on the suspected flour, as an effervescence will take place, and carbonic acid gas be disengaged.

#### Experiments in Assaying.

To the Editor of the Mechanics' Magazine:

SIR,—I am engaged in the iron trade, and had an intention to erect a blast furnace a few years since for smelting iron from the ore of a new bed, and was naturally desirous, before doing so, to ascertain as nearly as possible what were its qualities. I therefore commenced assaying it and some other ores found in the neighborhood; but I soon concluded that the methods described in the books, which direct the use of "calcined borax, pounded bottle glass, chalk, &c." were not suited to the object which I had in view; namely, to ascertain what kind and quantity of iron might be expected from the ore when used in the large way in the blast furnace. I therefore laid those articles aside, and continued my experiments with the same materials which I expected to use when working the furnace; and the following memoranda show some of the results obtained.

December 2—Roasted 3 specimens of brown hematite ore:

No. 1	lost in weight	16.01	per cent.
2	do.	13.52	do.
3	do.	14.58	do.

Assayed 2	14	3	of the above ore with
	8	0	of limestone,
	6	0	of clay,
		10	0 of pounded charcoal.

The above, after being three hours in the furnace, produced 1 oz. 9 dwts. 9 grs. of metallic iron, equal to 54.27 per cent. The iron was tough, like the iron from a blooming fire.

Note—This experiment was not very satisfactory, on account of the iron not forming a good button at the bottom of the crucible.

No. 5. Assayed—

1	15	0	of roasted ore, with
	5	12	of clay limestone,
	5	12	of clay,
	7	0	of pounded charcoal,
	13	4	metallic iron.

The above produced, after 3 hours' heating, 1 oz. 13 dwts. of iron, which, after deducting the 13 dwts. of metallic iron added to the charge, left 19 dwts. 20 grs. for the produce of the ore, equal to 56.66 per cent. The slug was rather tough and infusible; the specific gravity of the iron, 7.238.

The foregoing, I dare say, is as much as you will desire at one time. Should yourself, or any of your readers, desire more, I shall be happy to furnish you with further extracts, and remain,

Your obedient servant,

J. D. W.

Vergennes, April 13, 1835.



NEW-YORK AMERICAN.

MAY 9—15, 1835.

LITERARY NOTICES.

**THE WORKS OF MRS. SHERWOOD**, vol. IX., uniform edition. New York, HARPER & BROTHERS.—We have in this volume the commencement of the *Lady of the Manor*—the well known series of conversations on the subject of Confirmation—printed with all the accuracy of the preceding volumes.

**THE NATIONAL CALENDAR AND ANNUAL OF THE UNITED STATES**, for 1835: vol. XIII. *Washington*, PETER FORCE.—This annual becomes every year more valuable, and more explanatory of the proneness of the government, in the creation of offices, if nothing else. It has almost all the information contained in the famous "blue book"—which is only for members of Congress—besides the annual reports from the public departments, the tariff, &c. &c. Americans who interest themselves in public affairs, and all Americans going abroad, should have this Calendar.

**THE ELEMENTS OF GREEK GRAMMAR**, by R. VALPEY, D.D. F. A. S., with additions by C. ANTHON, Jay Professor of languages in Columbia College.—New York, W. E. DEAN. This is the tenth edition of this Grammar—a symptom that amid the march of mind projects, which sometimes threaten to overthrow the classics, the study of Greek yet holds its way.—The first edition was published about five years ago.

**THE FLOWER GARDEN OR MONTHLY CALENDAR OF PRACTICAL DIRECTIONS FOR THE CULTURE OF FLOWERS**, by MARTIN DOYLE, author of "Hints to small Farmers," "Practical Gardening," &c.—1st American edition, adapted to the climate of the United States, with notes, &c., by L. D. GALE, M.D. Prof. of Chemistry, &c.; New-York MOORE & PAYNE. This is a pretty, and as far as we can judge, a useful and judicious guide to those who love Flowers, and have the taste to cultivate them. It is plainly and perspicuously written, and adopts the form of a calendar, giving under each month the duties of that month, and the flowers to which care should be given.

**THE NORTH AMERICAN ARITHMETIC**.—Part third—for advanced scholars—by FRED. EMERSON, late Principal in the department of arithmetic of the Boylston School, Boston. Boston, RUSSELL, ODIORNE & METCALF. W. Y., COLLINS & HANNAY.—The testimony borne to the excellence of this treatise, by those most competent to form a right judgment, the Professors of various colleges—and teachers of schools—who unite in praising its perspicuous arrangement, and clear elucidations—dispense us from saying any thing further than to express our full assent, so far as we have found leisure to examine the work, to those praises. It should be added, that the public School Committee of Boston, upon the application of the masters of the schools, have discontinued the books on arithmetic previously in use, and substituted these—viz: parts I, II. and III. of Emerson.

**THE ALEXANDRIAN**, Nos. 1 to 15;—price 6 1-4 cents each, being a republication of valuable Literary and Scientific works; New York, WM. PEARSON.—Assuredly, if readers do not multiply in these days, it is not from want of temptation, or opportunity, for the best works are thrown, as it were, at their feet, for comparatively, a song. Here, for instance, we have bound up in a handsome volume, of some 450 pp. double columns and small type, fourteen numbers of the *Alexandrian*, containing both series of D'Israeli's *Curiosities of Literature*, and his *Essay on Literary Character*,

the whole for the sum—in numbers—of eighty-eight cents! In No. 15 *Combe's* capital book on the Constitution of Man, &c., is commenced.

**NEW YORK AS IT IS IN 1835**. New York. J. DISTURNELL.—A pretty little volume, containing a notice of all the institutions, literary and commercial, of this great city—a general description of the city and its environs, with maps, &c.—making a useful pocket companion and book of reference.

**TOUGH YARNS**, a series of Naval Tales and Sketches, by THE OLD SAILOR—author of *Greenwich Hospital*, &c. 2 vols. Philadelphia. E. L. CAREY & A. HART.—Our taste does not lie this way it may be—or perhaps because it has been over exercised by the multiplicity of sailor stories—but the fact is, we do not much admire these "tough yarns," though they are faithful delineations enough, we dare say, of the life and incidents they purport to describe. They lack interest, however, after Capt. Marryatt's stories.

**THE HIGHLAND SMUGGLERS**. By the Author of the *Kuzlibash*, &c. 3 vols. Philadelphia—E. L. CAREY & HART.—This is a change of scene, though scarcely of incident, for this writer; for it is still of wild mountain regions and lawless tribes that he writes—though the circumstances of climate and country, where the scene is laid, divest these volumes of the gorgeous accompaniments of his Eastern stories. The Highlands of Scotland, their scenery, manners and wild denizens including man, are delineated with the author's practised hand in these pages—which, from a hasty glance, at them, will not fail, we apprehend, to interest.

**DOMESTIC HAPPINESS PORTRAYED: OR, A REPOSITORY FOR THOSE WHO ARE AND THOSE WHO ARE NOT MARRIED**; 1 vol. New York, CHARLES HUBBELL.—This is mainly a republication of an old book, with however some prize Essays written for the present volume, and several other original papers, now published for the first time.

It is a compilation from writers of acknowledged merit, in honor of the married state, and laying down rules and inculcating precepts for better assuring the happiness of that state. It is consequently a book that interests, as it is adapted to, both those who are, and those who hope to be, married.

**MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS**, &c., for May. By D. K. MINOR, N. Y. THE APPRENTICES' COMPANION; No. 2. By D. K. MINOR.

Both these publications address themselves so immediately to the interests as well as the intelligence of the mechanics, that we have only to repeat the high estimate we put both upon the design and the execution of these periodicals.

**STANDARD WORKS OF THE SOCIETY FOR THE DIFFUSION OF CHRISTIAN KNOWLEDGE**; Nos. I., II., III., IV., V., VI., and VII. Price 6 1-4 cents. New York, ISRAEL POST, agent, 80 BOWERY.—On the appearance of the first number of this cheap and most laudable publication, we expressed our hearty concurrence in its object, which is—mainly—to put into the hands, or at least within the reach, of all, the best and most approved treatises in vindication of the authority and truth of the Bible; and to do so in the same cheap and accessible form, in which so much infidel poison is circulated; the bane and antidote being thus before the public, they are free to choose, and the peril of a wrong choice, none can absolve them from. The first six numbers comprise Bishop Watson's *Apology for the Bible*, in letters originally addressed to Thomas Paine, in refutation of the second part of his *Age of Reason*, and the *Apology for Christianity*, addressed in like manner to the historian Gibbon, in reply to the

famous chapters xv. and xvi. of his *Decline and Fall*, purporting to be "a candid but rational inquiry into the progress and establishment of Christianity." The general assent yielded to the arguments and eloquence of these two "Apologies" abundantly justify their selection, to head the list of "Standard Works."

No. VII. is devoted to a more modern, but not less admirable tract—that of Archbishop Whately, entitled "Historic Doubts relative to Napoleon Bonaparte." The happy idea of taking the arguments of philosophical doubters, such as Hume, and using them to disprove an acknowledged existence—like that of Napoleon—in order to show the fallacy of such arguments when arrayed against the Bible—is most happily carried out in this publication: and he who will read it, and then compare it, with Hume's essays, will admit we apprehend, that the fact of such a personage as Napoleon having lived and acted in our day, is to say the least, as questionable, as the authenticity of the Bible or of the miracles it records.

**BACHELER'S RELIGIOUS MAGAZINE**, &c. Vol. I. No. II. By ORIGEN BACHELER, New York.—After a considerable interval, we are glad to find this second No. published; since we are well assured, that, the more light is thrown upon the subject of the idolatries and false religions of other days, and other lands, the firmer will be the conviction of the truth of the Christian dispensation, which enlightens and improves, our own.

SUMMARY.

We relate the following circumstance without fear of being accused of merely telling a *snake story*, knowing the facts from the most unquestionable authority. A few days since, but a few miles distance in Jersey, a large hawk, seemingly in great hunger, was discovered hovering over the barn yard of a cottage, eagerly watching his opportunity to pounce upon the poultry below. After repeating his visits for a few days, he was fired at, but being missed, did not afterwards make his appearance. In the course of a few days the gentleman who made the shot was walking over the neighboring grounds, when he discovered a dead hawk, apparently but a short time deprived of life. Upon examination, the cause of the hawk's death was discovered to have been the swallow of a living rattlesnake, which had eaten out of the stomach of the bird, and nearly through the skin near the craw. The snake was about eleven inches long. The hawk was no doubt the same that eagerly watched the poultry, but fearing to return, and becoming famished for want of food, was obliged to eat his snakeship. The stomach of the hawk contained no food—it was stuffed, and now graces the private collection of a naturalist.—[Gazette.]

[From the Journal of Commerce.]

**FROM BERMUDA**.—By the schr. Brilliant we have Bermuda papers to April 28th, and a letter of the 29th.

The Colonial Legislature met on the 27th. The Acting Governor, in his speech at the opening of the session, said, "It affords me much gratification to be able to state that the great measure of granting unqualified emancipation to the slaves, which engaged the attention of the Legislature during its last session, has been followed by no interruption of the public tranquillity. Since the abolition of slavery, there has been no perceptible increase either of crime or vagrancy in this community, and I confidently hope that the liberal course so unanimously adopted by the Legislature of Bermuda, will tend to the general prosperity of the Colony."

Correspondence of the Journal of Commerce.

Hamilton, Bermuda, April 29, 1835.

The ship Henry from Liverpool bound to Mobile, came into St. George's yesterday, having in tow the barque America, from Matanzas bound to Hamburg, laden with coffee and sugar, which vessel she fell in with in a sinking state. Report says that the master of the America promised the master of the Henry one half the value of the vessel and cargo—if he should succeed in getting her in to port. The agents have however put them into the Admiralty Court. I cannot at present give further particulars, as my messenger of to-day has not yet reached her.



Perhaps at no time from the earliest history of the United States, has every branch of industry been so prosperous as at this moment. The merchant, mechanic, and farmer, is each enjoying unusual prosperity. Real estate is rapidly advancing, not only in our large cities, but in all our towns and villages, and the ability to produce, and consume, all the necessities of life, is increasing at a rapid rate. What can be the meaning of all this? We think we can name one of the causes. The wonderful change in respect to the use of intoxicating drinks throughout the whole Union, is operating on its prosperity, to an almost incalculable extent.—The farmer has discovered that stimulating drinks are not necessary to the culture of his farm; he has discovered that to produce grain for the brewery, or distillery, is a dead loss to the community. Just in proportion as the use of intoxicating drinks diminishes, the riches of the country increase.—If, therefore, our men of wealth desire to have their property confirmed and raised in value,—if they wish to see their warehouses filled with the products of the farmer, and their country unchecked in its prosperity,—let them use every proper means to disseminate, through the press or otherwise, the great principles of Temperance, so that every family in the Union may hear and know its health and wealth-giving power. From calculations, which we believe entitled to full credit, it is found, that on an average, each of the 2,000,000 of families, in the country, have been consuming to the extent of \$50 per year, in strong drink; and it has been supposed that the consumption in this way of one dollar, occasions in some way, the loss of another, so that the yearly loss to the nation, by its consumption of intoxicating drinks, has amounted to about 200,000,000—a mighty sum indeed, a sum totally lost to the country, and expended without receiving any equivalent benefit.

At this time, (such is the intelligence of the mass of the people) nothing is wanting to induce them to adopt the principles of the Temperance reform, and save all this enormous, and useless, expenditure of time, and money, and of suffering not to be estimated, but facts and sound argument—such facts and arguments as may be commanded and spread far and wide, by means of the Press—if that Press is only supported by the wealthy and the influential. It is believed that every dollar thus far expended to scatter information on the subject of temperance, has saved a thousand to the nation, and will continue to save at the same rate for years to come.—[Communicated.]

**Flour.**—The price of this article, which had risen recently, is said now to be pausing. Some accounts from Rochester to-day, however, which we have seen, quote wheat there as from 9s. to 9s. 6d. per bushel, which does not look like a fall in the price of flour. The supply, it is said, will not by any means equal that of last year.

The remains of Gen. Leavenworth are on board the ship Yazoo, under charge of Major Belknap, and are to be taken to Delhi, N. Y., for interment.

[From the N. Y. Daily Advertiser.]

The New York Sunday School Union held their nineteenth anniversary on Monday. In the forenoon the Schools assembled at their various churches and in the afternoon assembled in the Park, where Hymns of Praise were offered up. They were addressed by the Rev. Mr. Cox, of London, and the exercises were closed by a Prayer from the Rev. Dr. Milnor. In the evening the Society held their meeting in the Chatham street Chapel.

E. Lord, Esq., was called on to preside. The Rev. Amos Sutton, opened the meeting with prayer. Mr. Horace Holden then read the report of the last year's proceedings, by which it appeared that the number of scholars had considerably increased. After the report was read, the meeting was addressed by the Rev. E. W. Baldwin, the Rev. R. W. Dickenson, the Rev. T. M. Krebs, Mr. T. A. Packard, Secretary of the American

School Union, and the Rev. Dr. Milnor. The Rev. Dr. Matthews, then closed the meeting with prayer and it separated about 10 o'clock.

For the annexed abstract of the annual Report we are indebted to the Editors of the Observer:

The Sabbath school system was introduced into New York in 1816. The number of schools under the care of this society is now 67, conducted by 965 male and 1,030 female teachers; total, 1,995, of whom 1,633 are professors of religion, 626 have been pupils, and 101 have professed religion since the last report.

The number of pupils is 13,303, viz.

4,401 white boys.	5,542 white girls.
382 col'd boys.	478 col'd girls.
131 col'd adults.	273 col'd adults.

5,915 7,393  
Of the pupils, 142 have made a profession of religion since the last report. Thirty teachers and eight pupils have commenced preparations for the ministry during the year. Sixteen teachers and 88 scholars have died during the year. Sixty-three libraries contain 21,874 volumes.

The 104 teachers and 142 pupils who have united with the church, added to the former aggregate of 3,483, make 3,729. The 30 teachers and 8 pupils who are preparing for the ministry, added to the last aggregate of 281, make 319.

Many of the schools now have infant classes connected with them, and much good is anticipated from this measure. In 22 of the schools there are 1,456 infant scholars.

It is supposed that this city contains from 40,000 to 50,000 children between the ages of 4 and 16. The Board believe that the number of pupils in the Sunday schools of the Methodist, Episcopalian and Reformed Dutch churches not connected with their Union, is about equal to that of the churches attached to the Union, so that the whole number of Sunday scholars in this city is about 25,000.

**LAND SALES.**—Notice is given, by proclamation published in the Government papers, that public sales of land will take place at the places and times following, viz:

At the land office at Detroit, in the Territory of Michigan, commencing on Monday, the 10th day of August next.

At the land office at Mineral Point, in the Wisconsin district, in the Territory of Michigan, commencing on Monday, the 7th day of September next.

In the State of Indiana, at the land office at Laporte, on Monday, the 7th day of September next.

At the same place, in continuation, commencing on Monday, the 21st day of September next.

At the land office at Fort Wayne, on Monday, the 12th day of October next.

At the land office at Danville, in the State of Illinois, commencing on Monday, the 21st day of September next.

**THE MICHIGAN WAR.**—The National Intelligencer of yesterday publishes the annexed letter from Columbus, Ohio, affording the most recent intelligence of the state of this war.

COLUMBUS, May 7, 1835.

Gentlemen—The Governor and his suit, Commissioners, Chain-carriers, &c. arrived in this city last evening, being unable to finish the running of the line, in consequence, as they state, of the superior force of Michigan. The Governor intends to convene the Legislature about the first Monday in June, for the purpose of asking an appropriation to defray the necessary expenses of such a force as he may deem necessary to accomplish the intention of the Legislature, in the act of last session, providing for the resurvey of the boundary line, and the extending of jurisdiction over the territory in dispute. I think that the appropriation will be made, though it will meet with considerable opposition. Yours, &c.

By the Buffalo Commercial Advertiser of the 9th inst., we find that Messrs. Rush and Howard, "the Commissioners," as they are called of the President, to the State of Ohio and the Territory of Michigan, had arrived in that city.

Green peas and fine Green Turtle were on the dinner tables at Barnum's City Hotel on Saturday last. At Page's Hotel on Saturday, Sheephead, Lobsters and green Peas, were served up.

#### HEAD QUARTERS OF THE ARMY.

Adjutant General's Office,  
Washington, 1st May, 1835.

[Order No. 24.]

Promotions and Appointments in the Army since the first of January, 1835.

#### 1—PROMOTIONS. Corps of Engineers.

Second Lieutenant Alexander H. Bowman, to be First Lieutenant, 21st January, 1835, vice Tuttle, deceased.

Brevet Second Lieutenant Frederick A. Smith, to be Second Lieutenant, 21st January, 1835, vice Bowman, promoted—(brevet 1st July, 1833.)

#### First Regiment of Artillery.

Brevet Captain Justin Dimick, First Lieutenant, to be Captain, 6th April, 1835, vice Churchill, promoted.

Second Lieutenant Edmund French, to be First Lieutenant, 25th February, 1835, vice Ramsay, appointed Captain of Ordnance.

Second Lieutenant William Palmer, to be First Lieutenant, 6th April, 1835, vice Dimick, promoted.

Brevet Second Lieutenant Thomas A. Morris, to be second Lieutenant, 25th February, 1835, vice French, promoted—(brevet 1st July, 1834.)

Brevet Second Lieutenant R. T. P. Allen, to be Second Lieutenant, 6th April, 1835, vice Palmer, promoted—(brevet 1st July, 1834.)

#### Second Regiment of Artillery.

Second Lieutenant John C. Casey, to be First Lieutenant, 30th April, 1835, vice Mercer, resigned.

#### Third Regiment of Artillery.

Brevet Major Sylvester Churchill, Captain of the 1st Regiment of Artillery, to be Major, 6th April, 1834, vice Brooks, promoted.

#### Fourth Regiment of Artillery.

Brevet Lieutenant Colonel Alexander S. Brooks, Major of the 3d Regiment of Artillery, to be Lieutenant Colonel, 6th April, 1835, vice Jones resigned.

Brevet Captain Harvey Brown, First Lieut. to be Captain, 10th April, 1835, vice Schmuck, deceased.

Second Lieutenant William A. Thornton, to be First Lieutenant, 31st January, 1835, vice Wilson, resigned.

Second Lieutenant Thomas J. Cram, to be First Lieutenant, 10th April, 1835, vice Brown, promoted.

Brevet Second Lieutenant John H. Miller, to be Second Lieutenant, 31st January, 1835, vice Thornton, promoted—(brevet 1st July, 1833.)

Brevet Second Lieutenant James L. Davis, to be Second Lieutenant, 10th April, 1835, vice Cram, promoted—(brevet 1st July, 1833.)

#### Second Regiment of Infantry.

Brevet Captain John Bradley, First Lieutenant, to be Captain, 22d April, 1835, vice Clarke, promoted.

Second Lieutenant Amos B. Eaton, to be First Lieutenant, 22d April, 1835, vice Bradley, promoted.

Brevet Second Lieutenant James T. V. Bomford, to be Second Lieutenant, 22d April, 1835, vice Eaton, promoted—(brevet 1st July, 1833.)

#### Sixth Regiment of Infantry.

Brevet Major Newman S. Clarke, Captain of the Second Infantry, to be Major, 22d April, 1835.

Second Lieutenant Joseph D. Searight, to be 1st Lieutenant, 30th April, 1835. Vice Richardson, resigned.

Brevet Second Lieutenant John Conrad, to be Second Lieutenant, 30th April, 1835, vice Searight, promoted—(brevet 1st July, 1831.)

#### Seventh Regiment of Infantry.

Second Lieutenant Theophilus H. Holmes, to be First Lieutenant, 26th March, 1835, vice Newell, deceased.

Brevet Second Lieutenant Henry McKavett, to be Second Lieutenant, 26th March, 1835, vice Holmes, promoted—(brevet 1st July, 1834.)

#### 2—APPOINTMENTS.

##### Staff.

Charles Mapes, to be Paymaster, 7th January, 1835.

Peter Muhlenburg, to be Paymaster, 2d February, 1835.

Samuel R. Moore, to be Assistant Surgeon, 14th March, 1835.

Alexander F. Suter, to be Assistant Surgeon, 27th March, 1835.



Ordnance Department.

First Lieutenant George D. Ramsay, of the 1st Regiment of Artillery, to be Captain, 27th February, 1835, vice Hills, deceased.

3—CASUALTIES.

Resignations.

Lieutenant Colonel.

Roger Jones, 4th Artillery, 6th April, 1835.

First Lieutenants.

Hugh W. Mercer, 2nd Artillery, 30th of April, 1835.

Horace A. Wilson, 4th Artillery, 31st January, 1835.

Asa Richardson, 6th Infantry, 30th April, 1835.

Second Lieutenant.

Theophilus F. J. Wilkinson, 2d Artillery, 28th February, 1835.

Brevet Second Lieutenant.

Goode Bryan, 5th Infantry, 30th April, 1836.

Staff.

Benjamin R. Hogan Assistant Surgeon, 30th April, 1835.

Deaths.

Captain John Hills, Ordnance, 25th February, 1835.

Captain Jacob Schmuck, 4th Artillery, 10th April, 1835.

First Lieutenant Stephen Tuttle, Corps of Engineers, 21st January, 1835.

First Lieutenant John E. Newell, 7th Infantry, 28th March, 1835.

Second Lieutenant Walter S. Chandler, 2d Artillery, 25th January, 1835.

Staff.

Ephraim M. Blane, Assistant Surgeon, 13th March, 1835.

Samuel W. Hales, Assistant Surgeon, 30th January, 1835.

2.—The officers promoted and appointed, will report accordingly, and join their proper stations and companies without delay: those on detached service, or acting under special orders and instructions, will report by letter, to their respective Colonels.

By order of ALEXANDER MACOMBE,

Major General, Commanding in Chief;

ROGER JONES, Adjutant General.

"The frigate Constitution made the passage to Havre in twenty-four days. The Commodore was requested to use all possible speed, and it seems that he did. The old ship never crossed the Atlantic so rapidly before."—[Going the rounds.]

The Constitution frigate is said to be the fastest sailing vessel belonging to the United States, yet she only kept pace on her passage to Havre with the packet ship *Havre*, both having left this port on the 16th March, and both arrived at Havre on the same day, (9th of April,) the latter a few hours ahead. But the packet ship *Britannia*, which also sailed in company with the Constitution, arrived at Liverpool on the 8th, and beat the later one day in her passage. We notice this circumstance because it is generally supposed that no vessels can compete in sailing with ships of war. We question whether the vessels of war of any nation can "go ahead" of the New York merchant packets.—[Advocate and Journal.]

THE URSULINES.—We are glad to find by the annexed article in the Boston Commercial, that the rumor of recent insults to the Ursulines at Roxbury, is unfounded.

The reported attempt to disturb the Convent at Roxbury on the night of the 6th, it appears from certificates which have been shown us, is without foundation. It arose from a number of young men belonging to Roxbury, who had been to Brookline on that evening to serenade some friends, stopping a short time in front of the Convent, where they played a few tunes and sung a song.—One of the certificates shown us, is from the Lady Superior, in which she says, she has "occasion to believe no insult was intended, but on the contrary the party who stopped before the Convent were actuated by kind and complimentary feelings, as has since been ascertained, although the young ladies experienced at first very great alarm."

The Hudson paper of Monday, in reference to the persons injured by the explosion on board the steam boat *Advocate*, says:

"We are informed that J. L. Bronk, Esq. is still in a dangerous situation, and has not been removed from Coeymans, that Col Butler is fast recovering, and that two more of the children of Mr. Smith have died."

FOREIGN INTELLIGENCE.

LATER FROM FRANCE.—By the ship *Citizen*, a transient vessel from Havre, there are accounts two days later than those before received.

MADRID, April 2.—The Colombian Generals Soublot and O'Leary arrived here yesterday, with powers to treat for an acknowledgment of the independence of the Republic, and have to-day had an audience of the President of the Council. The Government has received very favorable reports from the Commandant of the Provinces, as to the progress of the recruitment for the army. Hitherto, all the men called into the service have entered with the utmost alacrity, displaying great zeal and ardor. The Ordnance interdicting the soldiery from singing patriotic songs and uttering cries, has produced serious disturbances at Malaga. The Ordinance was published at the moment when the funeral of an Urban Militiaman was taking place, attended by a long train of his friends. The band which preceded the procession, having begun to play Riego's March, the Governor sent an Adjutant to order it to cease, but as this injunction was disobeyed, the armed force interfered, and a contest ensued, and the Governor became so much alarmed, that he left the town. Malaga being thus left without any authority over it, a provisional Junta, was formed, and the people demanded the re-establishment of the Constitution of 1812. The new Junta, however was fortunately composed of moderate men, who appointed a new Governor devoted to the Queen. Thanks to this energetic measure, the Carlists, who had begun to post up their proclamations were reduced to subjection and order was restored. General Lopez, on the 17th ult. received a challenge from Don Louis O'Donnell, the Commandant of the cavalry of Don Carlos to meet him with an equal number of cavaliers, armed only with their swords. Gen. Lopez replied that he not only accepted the challenge but would come to the place of rendezvous, whenever it might be appointed, with 100 men less than his adversary. A curious publication, showing the number of victims that have been sacrificed by the inquisition, has just appeared, and according to which 105,286 fell under Torquemada, 51,137 under Cisneros, 34,952 under Diego Perez.

Those who suffered under the Inquisitors who preceded these three monsters, amounted to 3,410,215. It is reckoned that 31,912 have been burnt alive, 15,659 have suffered the punishment of the statute, and 291,450 that of the penitentiaries.—500,000 families have been destroyed by the Inquisition, and it has cost Spain two millions of her children.

PARIS, April 11.

Reports have been several days in circulation of Algiers being exposed to great danger from the Arabs, and yesterday it was rumored that it had fallen into their hands. The Ministerial Evening Journal, after noticing that the reports current are more than exaggerated, gives the following:—"The Government has received news from Count d'Erlon to March 29th. The tribes of the West having formed some tumultuous assemblies beyond the Chiffa, Gen. Rapatel marched on the evening of the 27th from the camp of Bouffarick, at the head of the 10th Light, two companies of Zouaves, two squadrons of the 1st regiment of African Chasseurs, a squadron of Spahis, and some pieces of Artillery, to disperse these crowds.—He was the next day at Bouffarick, and wrote as follows to Count d'Erlon: 'I was this morning on the Chiffa; the Chasseurs and the Spahis crossed it at day break, and charged the crowd. The enemy did not keep his ground an instant, but had several killed and wounded in this charge, which took us more than two leagues beyond the river. In returning, the enemy followed us a league on this side of the Chiffa, renewing his flight as soon as we charged him anew. He fell into some ambuscades that I had laid for him. He had 60 men killed or wounded, and we had not a single man killed.' Count d'Erlon had recommended to Gen. Rapatel to make only one coup de main upon these crowds of the West. The troops which occupy the camp d'Erlon are under cover, and in safety, and those with which it had been judged expedient to reinforce them, have received orders to return to their cantonments."

In the following statements derived from a London paper, we find truly honorable instances of the proper use of patronage and wealth.

The following facts ought to be known: they do equal honor to Sir R. Peel's discernment and liberality:

On Monday last Mrs. Somerville received an autograph letter from Sir R. Peel, informing her in the most delicate style of compliment that the knowledge of her acquirements in science had made it his duty to submit to His Majesty the propriety of granting to her a pension on the civil list of 200*l.* a year. Mrs. Somerville's letter of thanks was accompanied by a copy of her book. The day following (Thursday last) she received a handsome acknowledgment for the book, with an expression of regret that it had lost the charm of novelty, as he had already read it in the first edition.

The Rev. Mr. Milman has also received an autograph letter from Sir R. Peel, offering this shamefully persecuted author of the admirable *History of the Jews* the living of St. Margaret's, Westminster.

Mrs. Hemans, who has employed her talents entirely for the support of a large family, having been long since deserted by her husband, was lately, within ten days, most dangerously ill. In this state, in bed, with a pencil, she wrote some beautiful verses, which were sent to her friend, the accomplished Mrs. Lawrence, of Liverpool, who sent them to a nobleman in London, who was so struck with them and the unhappy situation of their author, that he took them to Sir R. Peel, who instantly desired the nobleman to cause Mrs. Hemans' eldest son, about 18 (who has been educated gratis by Dr. Butler, of Shrewsbury,) to come to London to receive an appointment in a public office, whilst Sir R. Peel himself wrote a letter of condolence to the mother, enclosing a bank note of 100*l.* for his outfit.

HISTORY OF IRELAND by Thomas Moore.—Of the first volume, the only one that has yet appeared of this publication, which is part of the Cabinet Cyclopaedia, the London Literary Gazette, thus speaks:

The learned Rudbeck, see his *Atlantica* in four volumes folio, ascribes the building of an ancient temple in Sweden to one of the sons of Noah; and, after numerous pros and cons, cautiously expresses his suspicion that "it was probably the youngest son!" In the spirit of "the learned Rudbeck," Mr. Moore has begun his history sufficiently early, though he has only thought it necessary to commence regularly with the Celtic origin of the Irish, a thousand years before the Christian era. In the after discussions, however, he makes some amends for this antiquarian and national moderation, by a few references to the deluge and antecedent times; but nothing like the Welsh pedigrees, where Adam stands about the middle of the tree; we mean the genealogical Tree, and not the Tree of Knowledge.

Under these circumstances, the first volume, which marks the accession of so popular a contributor to this monthly series, does not offer us much on which to exercise our critical propensities. Irish antiquities have often amazed and puzzled us; and having dealt with St. Patrick, Adamnan, Keatinge, Vallancey, Ledwick, Milner, O'Halloran, O'Connor, Betham, Lanigan, O'Brien, &c. &c. &c., we are the less inclined to meddle with their dicta, as licked into a new and condensed form by their distinguished countryman. Suffice it to state, that the results of Mr. Moore's reading and investigation are principally that the Irish are of Celtic origin, and very early connected with the east, probably with Persia;—that their intercourse with the Phenicians was also anterior and superior to that of Britain, and that the "Sacred Isle" was peculiarly famed and glorified;—that the round towers were fire temples; and that very considerable civilization prevailed before authentic dates can be attributed to historical facts;—that letters and learning were cultivated by the first Druids; and that they were different from the Milesian or Scotie, as they were from the Belgic or Gaulic races;—that they were also different from the Welsh, who are of Pictish and Cimbric origin;—that Argyleshire was conquered by the Irish and the kings of Scotland, descended from them;—that the pretensions of Scottish writers are groundless forgeries, and Ossian a bit of a humbug;—that Christianity was introduced by readier means and in a purer system by St. Patrick, than into any other land; and that Ireland has been grievously oppressed and betrayed, almost ever since it sprang from the sea. Accounts of the Saints, and a good deal about the Paschal controversy, complete the volume.



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[From the Gazette des Tribunaux.]

## The Mysterious Deposit.

COUR ROYALE DE TOULOUSE.

No doubt our readers will recollect the narrative we published, a short time back, of the suicide of M. Daure, the former Secretary of M. de Talleyrand. The singular circumstances attendant upon this event must have made a deep impression upon every mind.

Some hours before the fatal moment, M. Daure sent to the Abbé Marcelin, at Montauban, in whom he had long reposed the most perfect confidence, sundry papers and a trunk which was locked up, with the injunction either that it was not to be opened before the 1st March, 1835, or that the same should be delivered up to a person who would come from Paris to claim them. M. Daure's mother, who suspected that the trunk contained a considerable sum of money, demanded to have detailed particulars of its contents. The Abbé Marcelin declined to allow the secrecy of the deposit intrusted to his friendship and discretion to be violated. In consequence of this refusal, and of the persistence of Madame Daure, the Royal Court of Toulouse was called upon to decide the disputed point.

Before the discussion of the legal question by the advocates, the Abbé Marcelin conceived it to be his duty to state the facts which had forced him to appear before the Court.

"On the 19th of November last," said he, "I returned home from the country at about ten at night. I had already retired to rest, when a message was brought to me requiring my immediate attendance at a house which was named to me, for a very pressing matter. I repaired thither. 'Here is a trunk addressed to you,' said a person to me; it has just arrived; it is sent by M. Daure, who announces to us that he is about to commit suicide!"

"The person who thus addressed me did not appear to believe that this violent resolution would be adhered to. For my part I thought differently. I knew that Mr. Daure was not a man to say, 'I am going to kill myself!'—without doing so. I rapidly gathered together all the things which were addressed to me, and I prepared to set out for Penne. At midnight I was on my way; and I buoyed myself up with the hope that Daure was still living, and that I might, perhaps, save him. He was dead! In about three quarters of an hour after he had sent off the messenger with the things confided to me, he blew out his brains! On my return to Montauban, I took cognizance of the papers which had been sent to me; I had merely cast my eye over them before. Among these writings there were several which were to be read by me, and afterwards burnt. Others were to be sent to their addresses: among the latter was M. Daure's will in favor of his mother; this document was unsealed, and in his mother's absence I delivered it to his sister, Madame Vignais, in presence of an old woman, who also appeared to me to belong to the house. Among the small number of papers which I was to preserve was this letter, which I am bound to read to you, gentlemen, although it is too flattering towards myself:—it is the title by which I hold the deposit, (here the Abbé read the letter.) 'You must have remarked, gentlemen, the precision with which every sentence of this letter is written. I ask of you what is the signification of the following precise and clear lines, so full of calm, that one would almost be inclined to hesitate at believing they were written in the presence of death? 'No one—absolutely no one upon earth is to see it—you have no account to render to any living soul; your conscience is the only tribunal to which you have to look in this respect! \* \* \*'"

"Do you believe, gentlemen, that the man who addressed me thus could, a few hours afterwards, appoint any person 'upon earth' to look into the trunk to oblige me to 'render an account to any living soul'—to submit to the jurisdiction of any other tribunal than that of my conscience? I have not been able, gentlemen, to afford myself that melancholy, but consoling conviction, that my friend died under the influence of those hallucinations which carry off at one and the same time both the resolution and the will, and the conscience. Unhappily I had seen too clearly the foundation for this suicide to be able to attribute it to what we call madness. I confess, however, my opinion in this respect, and look upon Daure, not as a guilty suicide, but as a poor madman who was to be pitied, if the authority given to his mother (an authority which she declares she received after his communication to me) was such as she pretended: it would then remain

to have the act of suicide explained in the midst of a series of acts which might appear extraordinary to the mass of mankind, but of which I—I know the desperate logic."

The Abbé Marcelin maintained that Madame Daure had exaggerated the financial position of her son.

"Daure," he said, "was so well known to possess nothing of his own, that all through his life the most infamous suspicions hung over him; his apparent fortune was surrounded by so much mystery that persons thought proper to spread the report that Daure was a spy for high personages. This is an atrocious calumny, which I repulse with all the energy I am capable of, and all the indignation of an enlightened conscience! Daure had so little money, Gentlemen, that a short time before his return to the south he claimed in the most pressing manner 1500 francs, which he had left in the hands of a friend before his departure."

The Abbé then explained the nature of his connection with Daure. He had never written direct to the Abbé from Paris; he spoke a good deal of him to others. Once only a letter was sent him, inclosed to one of his friends. Therein he wrote—

"I could wish to tell you several things, but cannot at present. However, you know how to comprehend so much and so well. I have sold the few things I had here, and am going in a few days to Germany. Perhaps I shall soon acquaint you that I have entered a convent of Trappists, which I once visited in the midst of the forests of Bohemia."

"This was written," said the Abbé, "in the beginning of September last, when he already contemplated making way with himself."

"I could wish, Gentlemen, that it were as clear to your minds as it is to mine, that in acting in regard to me as he did,—Daure did not look upon me as a man upon whom he was desirous to confer a favor, but of one whom he considered worthy of being made the depository of a secret,—as a man who knew all the most secret episodes of his life, who had divined his virtues as well as his defects, and who was able, as a priest, to complete the former, and obviate the fatal consequences of the latter."

"I have not been able to call exactly to mind the period when Daure quitted Montauban for the last time. I think it was in the beginning of last summer. I do not know what he was doing in Paris. All I know (for his friends have since written to me to that effect) is that it was visible to every one what a strange evolution had taken place in his character, and that disastrous projects disturbed his mind. An understanding was come to to endeavor to divert him from those dreadful pre-occupations. The Duchess de Dino conferred on the subject with M. Guizot, who had a particular esteem for Daure. The Minister wrote to invite him to call upon him the next day, at eleven o'clock. This was to inform him of his nomination to an employment which it was believed was perfectly suitable to his taste. Daure was all his life susceptible to a degree, and he became even more so as his death approached. He wrote to the minister, in answer, 'If the minister wishes to speak to me, I live in such a street—such a number.' At length he was enabled to leave Paris, and, as he said, to tear himself from his odious pursuits. I went to Germany, returned again to Paris, and quitted it again for the south. His death was inevitable; he could no longer bear up against the imperishable sorrows of which he had spoken so much to me. Every line he wrote proved this. Thus in the diligence, seeing that a husband took offence at the attentions, full of noble delicacy, which he paid to his wife, he said to himself, 'How singular—this is the first time that a man has been jealous of death.' Daure left the diligence at a distance of two hours' journey from Montauban, and thence, during the night, in a cart, and lying upon his trunk, he took the direction of the wildest spot in the Department, Bruniquel. There his presence, and the mystery with which he constantly had the mania to surround himself, excited the attention of the gossips. As he says in one of his letters, he retreated before a set of old women, and letting his horse wander whither he pleased, plunged into the profound ravine of the Aveyron, and arrived at Penne. In his description of this wild spot he wrote, 'Here is a place which is fit to make one in love with death.' He established himself then at Penne. In the house of a respectable man, by whose delicate attentions and hospitality he was arrested for some time on the brink

of the tomb. I only knew of his arrival at Penne eight or ten days before his death. I knew nothing of his fatal intentions, although the letter he wrote just before his death proves that they were long before matured. This, Gentlemen, is all that my conscience, to which an important secret is intrusted, permits my voice to declare to you. Do not demand proofs or explanations from me, for at the slightest question I shall cease to speak, and nothing shall force me to break silence. I am ignorant as to what the law will dictate to you relative to the cause of this suicide. I have been faithful to the last to friendship and to the dead, and I have taken for the guide of my conduct these words, the last which Daure has left us—'Remember that the dead have no other avengers upon earth than the conscience of the living.'"

The Court, by consent of all parties, ordered that seals should be affixed to the trunk; that they should not be removed before the first March; that this operation should not take place otherwise than in the presence of M. Cornac, Judge of Montauban, who should deliver to the Abbé Marcelin such papers as were not titles to property, as well as the letters, the said judge not to be allowed to read the addresses of those letters.

## The Marquis De Crequy.

The fifth, and, we fear, the all but concluding volume of the amusing memoirs, published under the above name, has just appeared; and, if less entertaining than its predecessors, as treating of times more familiar to the general reader, contains innumerable curious anecdotes of a light nature, a few of which we propose translating for the benefit of our readers.

**Fashion.**—"I have seen the rise and fall of all sorts of ridiculous fashions," writes the old Marchioness. "During the time of the Regency, it was the custom to wear upon one's temples andynde plaisters, as a remedy against the vapors; and, by way of rendering them ornamental, they were adorned with small diamonds, points of cut steel, or garnets; so that they had the appearance of being nailed to the temple by an infinite number of small nails. Gold hair powder, extremely unbecoming to both brown and fair, was also in vogue; and high-heeled shoes, whose dimensions rendered it necessary to walk on the extreme points of the toes. But all these follies were nothing to the style prevalent among our fashionables immediately before the revolution. The men were shut up in tight coats, called, after the English, a frock, sloped off, so as to make an indecent exhibition of the hips, and ending in a swallow's tail. These frocks were chiefly worn of scarlet cloth, with buttons the size of a crown piece, composed of a circle of gold surrounding a watchglass, under which was seen a collection of rarities,—such as sprigs of moss or sea-weed, curious insects, diamond beetles, and cantharides. With a red coat, it was indispensable to wear a muslin waistcoat, black silk breeches, and silk stockings of blue, shot with white. The hair was dressed *à la débâcle*, with a tiny queue, and seven or eight ounces of powder on the collar and back of the coat. Two long watch-chains, each having a large bunch of gold bells, hollow acorns, or other trinkets capable of making a tinkling noise, which were called breloques, completed the costume; with a little cane in the hand, such as are used by footmen for beating coats. These were said by the young courtiers to be 'excellent weapons for fighting cats!'"

"The head dresses of the ladies, meanwhile, had attained a most absurd elevation. Carriage cushions were necessarily abolished; and, in their stead, a slight wadding was used, about the thickness of a Montpellier scent bag. What the hair-dresser had the art of sticking on the top of a female head, under the name of Paufs, Touquets en Lubie, and Valgalas, is scarcely credible! Leonard, the hair-dresser (whom Monsieur used to call the Marquis de Leonard, to distinguish him from his brother, the Chevalier, who only consented to cut hair), boasted that he would dress the Duchesse de Luges, who, relying on his address, seldom looked in the glass, with one of her own chemises; and Madame Thibault, the Queen's bedchamber woman, obtained her Majesty's sanction to the exploit. The Duchess accordingly arrived at Court (luckily there was a general mourning) with one of her own cambric shifts twisted into her hair. This adventure brought similar follies into fashion, and, a few days afterwards, Madame de Luval appeared at Court with a damask napkin for her head-dress, which every one found in admirable taste. In the



year 1785, the Marechale de Matignon chose to be a coiffeur a la Jardiniere for Court, by Leonard; with a checked napkin of brown and red calico, in which appeared a head of green broccoli, an artichoke, a pretty little carrot, and some radishes. Madame Charles de Lameth exclaimed "Lord! how delightful!—nothing but vegetables!—I doat upon vegetables!—they seem so much more natural than flowers."

"By way of being 'natural,' too, my relation, the Countess de Clermont Tonnerre, used always to stir the salad with her fingers; and, after supper, when she amused herself with patting or boxing the ears of her 'dear Stanislas,' the Count used to exclaim—'Delicious creature! Her caresses make one hungry with the scent of Tarragon vinegar and Jamaica pepper! Those pretty little hands deserve to be eaten up!'"

"A nun, it seems, would sometimes be guilty of a repartee. "When Madame de la Motte, the heroine of Maria Antoinette's diamond necklace adventure," says Madame de Créquy, "was shut up in the *Salpêtrière*, certain of the Duchess of Chartres ladies in waiting went, on pretence of viewing the establishment, to obtain a glimpse of the criminal. At length they made a direct application for the indulgence to Sister Victoire, the Superior, who demurred, on the ground of Christian charity towards the sufferer. Madame de Blot at length insisted on the prerogative of her appointment in the Orleans family; but Sœur Victoire was inflexible. 'I did not find it written in Madame de la Motte's sentence,' she said, 'that she is condemned to receive the visit of the Duchesse de Chartres's ladies in waiting.'"

Extract from a letter of Mr. John Barlow, one of the most experienced and distinguished Engineers of London, dated on the 27th February last:

"There is one source of revenue to a Coal Gas Company, fast coming into practical effect here, which promises to be of great importance, namely cooking by gas; I know one family who have used no other fuel for cooking for the last two years, and another who for several years have never lighted any other fire in their house, for any other purpose whatever, than gas, during the 3 or 4 hot months, and they both say it is cheaper, more convenient, cleaner, and the cooking better. Hundreds, and probably thousands of families will, in this country, be supplied with gas for cooking during the ensuing summer. They now roast, bake and boil by gas. The heat is always ready when wanted, and is extinguished when it is no longer required: no dust, no preparation, nor any cleaning up afterwards; the cook can leave a joint of meat either roasting or boiling, and never look at it again till the clock informs her it is time to take it up; I know a family who regularly put their meat down, and all go to Church on Sunday, locking the house up, and leaving a capital dinner to the care of the gas. I dwell on this subject a little because in my view, it is very important, and it behoves Directors and Shareholders to give it every encouragement."

#### THE FLOWER SPIRIT.

I am the spirit that dwells in the flower;  
Mine is the exquisite music that flies,  
When silence and moonlight reign over each bower  
That blooms in the glory of tropical skies.  
I woo the bird with his melody glowing  
To leap in the sunshine, and warble his strain,  
And mine is the odor, in turn, that bestowing,  
The songster is paid for his music again.  
There dwells no sorrow where I am abiding;  
Care is a stranger, and troubles us not;  
And the winds as they pass, when too hastily riding,  
I woo, and they tenderly glide o'er the spot.  
They pause, and we glow in their rugged embraces,  
They drink our warm breath, rich with odor and song,  
Then hurry away to their desolate places,  
And look for us hourly, and think of us long.  
Who, of the dull earth, that's moving around us,  
Would ever imagine that nursed in a rose,  
At the opening of spring our destiny found us,  
A prisoner until the first bud should uncloze;  
Then, as the dawn of light breaks upon us,  
Our wings of silk we unfold to the air,  
And leap off in joy to the music that won us,  
And made us the tenants of climates so fair!

#### SONG.

Give me old music—let me hear  
The strains of days gone by;  
Nor stay thy voice in kindly fear,  
If to their tones my falling tear  
Should make a mute reply.  
The songs that lulled me on the breast  
To sleep away the noon,

Sing on—sing on!—I love them best;  
There's witchery in the notes impressed  
Of each familiar tune.

Give me old wine—its choicest store  
Drawn from the shady bin;  
Our vineyards will produce no more,  
Such rare strong juices they gave of yore,  
As sparkling lies within.  
This was my grandeur's chief delight,  
When the day's chase was o'er;  
Fill high!—Fill high!—its treasures bright  
Should sparkle on our board to night,  
Though we should drink no more.

Give me old Friends—the tried, the true,  
Who launched their barks with me,  
And all my joys and sorrows knew,  
As chance's gales the pilgrims blew  
Across a troubled sea.  
Their memories are the same as mine;  
Their love with life shall last;  
Bring one, bring all, their smiles shall shine  
Upon our old good song and wine,  
Like sunbeams from the past.

#### MILL-DAM FOUNDRY.

ON MONDAY, June 1, at 12 o'clock, at City Hall, (unless previously disposed of at private sale,) will be sold by auction, the above well known establishment, situated one mile from Boston. The improvements consist of—

No. 1. Boiler House, 50 feet by 30 feet, containing all the necessary machinery for making boilers for Locomotives and other steam Engines.

No. 2. Blacksmith's Shop, 30 feet by 90, fitted with cranes for heavy work.

No. 3. Locomotive House, 54 feet by 35, used for putting together Locomotive Engines. Several of the best Engines in use in the United States have been put in this establishment.

No. 4. A three story brick building, covered with slate, 120 feet by 46, containing two water-wheels, equal to 40 horse power; Machine Shop, filled with lathes, &c.; Pattern Shop; Rolling Mill and Furnaces, capable of rolling 4 tons of iron per diem, exclusive of other work; three Trip Hammers, one of which is very large; Engine for blowing Cupola Furnaces, moved by water-wheel; one very superior 12 horse Steam Engine, which could be dispensed with; and a variety of other machinery.

No. 5. An Iron Foundry, 80 feet by 45, with a superior air Furnace and two Cupolas, Core oven, Cranes, &c. fitted for the largest work. Attached to the Foundry is a large ware-house, containing Patterns for the Castings of Hydraulic Presses, Locomotive and other Steam Engines, Lead Mill Rolls, Gearing, Shafts, Saws, Grates, &c. &c. These were made of the most durable materials, under the direction of a very scientific and practical Engineer, and are supposed to be of great value.

No. 6. A building, 65 feet by 36, containing a large stock of chimneys, and furnaces, for making Cast Steel. This building is at present used as a boarding-house, and can accommodate a large number of men.

No. 7. A range of buildings, 200 feet long by 36, containing counting room, several store-rooms, a Brass Foundry, room for cleaning castings, a large loft for storing patterns, stable for two horses, &c. &c.

The above establishment being on tide water, presents greater advantages for some kinds of business than any other in the United States. Coal and Iron can be carried from vessels in the harbors of Boston, to the wharf in front of the Factory, at 25 to 30 cents per ton. Some of the largest jobs of Iron work have been completed at this establishment; among others, the great chain and lift pumps for freeing the Dry Dock at the Navy Yard and Charleston.

The situation for Railroad work is excellent, being in the angle formed by the crossing of the Providence and Worcester Railroads. The Locomotive "Yankee," now running on the latter road, and the "Jonathan," purchased by the State of Pennsylvania, were built at these works. With the Patterns and Machinery now in the premises, 12 Locomotives and as many tenders, besides a great quantity of cars and wagons, could be made per annum.

For terms apply to  
THOS. J. ECKLEY, Treas'r. &c., Boston, or to  
ROBERT RALSTON, Jr., Philadelphia.  
Boston, April 21, 1835.

#### PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are furnished with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

Troy, N. Y. July, 1831. HENRY BURDEN, Agent.

Spikes are kept for sale, at factory prices, by J. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. L. Brower, 223 Water street, New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrad & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1835am

H. BURDEN.

#### RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 80 Wall street, New York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete. J. S. ROGERS, KETCHUM & GROSVENOR.

#### PATENT HAMMERED SHIP, BOAT, AND RAILROAD SPIKES.

Railroad Spikes of every description required, made at the Albany Spike Factory.

Spikes made at the above Factory are recommended to be public as superior to any thing of the kind now in use. Ship and Boat Spikes made full size under the head, so as not to admit water.

Orders may be addressed to Messrs. ERASTUS CORNING & CO., Albany, or to THOMASTURNER, at the Factory, Troy, N. Y. sept 13 1y

#### RAILWAY IRON.

35 tons of 1 inch by 1 inch,	Flat Bars in lengths of
200 do. 1 1/2 do. do.	14 to 16 feet, counter sunk
40 do. 1 1/2 do. do.	holes, ends cut at an angle
800 do. 2 do. do.	of 45 degrees, with splicing
800 do. 3 1/2 do. do.	plates and nails to suit.

soon expected. 350 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON, 9 South Front street, Philadelphia. Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use both in this country and Great Britain, will be exhibited to those disposed to examine them. d7lucowr

#### SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by

E. & G. W. BLUNT, 154 Water street, corner of Maiden lane. J31 6t

#### SURVEYING AND ENGINEERING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new, among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also a Railroad Goniometer, with two Telescopes—and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG, Mathematical Instrument Maker, No. 9 Dock st., Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested. Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend, JAMES P. STABLER, Sup't of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer. Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad. ml 1y  
Germantown, and Norristown, Railroad



**Algers as she is.**—Algers is daily assuming a more European aspect; hats are nearly as often seen as turbans, cigars have replaced the long pipes and the Moorish bazars give way to the glazed windows of French shops. Upwards of fifty merchants have established counting-houses; and a considerable number of mechanics and tradesmen, including of course a full proportion of modistes, couturiers, and perruquiers, are thickly scattered about. Eleven grand cafes with billiard-tables, four grand hotels (which are, however, execrable,) three restaurants, one hundred eating-house, two *cabinets littéraires*, one circus, a cosmorama, &c. have already been established, and cabriolets and omnibuses were shortly to ply from the Bab hazoon to Mustafa Pasha, and from Babel-hout to the Dey's country villa. The Karbakh is a little town in itself, containing the late Dey's palace, and several other houses and gardens. The palace has suffered much from the French soldiery; who, on first occupying it, pulled up the pavement, tore down the glazed tile coating of the rooms, and otherwise committed great injury in their eager search after treasure. The marble flooring, the arched galleries, supported by marble pillars of fantastic but graceful forms, which surrounded the open courts, the elegant fountains, which scattered coolness around, and the latticed shahnesheens, still, however, remain to pay the fatigue and trouble of the visitor's ascent. The *corps-de-garde*, with the gate, and the sycamores, banana-trees, and vines, which surround it, together with the mixture of French uniforms and Moorish costumes, formed altogether a beautiful little picture; as did also a wine-shop, shaded by a vine-covered pergola, under which were seated groups of soldiers playing at cards, drinking, flirting with some *piquantes* French brunettes, or teaching "Trompette," the *chien du régiment*, a variety of tricks.—[Major Temple's Excursions in Algiers.]

**Barrack-Building at Tunis.**—On speaking to the architect and engineers, and asking them to show me their plans, they at first did not quite seem to understand what a plan was: when it was explained to them, they declared they had nothing of the sort, and that, in fact, the Moors never made any previous to commencing a building; but that they built by the eye a certain length of wall, and that when this had been sufficiently prolonged another was built at right angles to it, and so on. What is still more remarkable, their arches are also constructed entirely by the eye, and have no frame work to support them during the process, which is as follows:—A brick presenting its broad surface to view, is placed with its edge on the buttress, where is to commence the spring of the arch; another is made to adhere to it by means of a very strong cement made of a gypsum peculiar to the vicinity of Tunis, which instantly hardens; on this brick is placed another in the same manner, and thus they proceed till the arch is completed. I saw a vault myself thus made in less than an hour and a half. These arches and vaults, when finished, are very graceful and correct in their proportions, and nothing can equal their strength and solidity. In building walls, an oblong frame about seven feet long, and as broad as the wall is intended to be, is placed on the foundations, and then filled with mortar and pieces of stone; in a few minutes the frame is removed, and placed in continuation of the line. This method appears to have been adopted in the construction of Carthage.—[Major Temple's Excursions in Algiers.]

**Phrenology run Mad.**—It appears that there is an *Orthophrenological* establishment at the village of Issi, near Paris, where children are received, who are incapacitated from receiving their education in a school in consequence of faulty conformation of the brain. The skulls of these unfortunate little creatures are to become the subject of physiological examination and experiment. Their encephalic mass is to be modelled, compressed, handled, and remoulded. Gall and Spurzheim merely pointed out the bumps of the different passions. They never dreamed of effacing them, and raising the bumps of virtuous propensities and genius to supply their place. They never thought of penetrating into the layers and recesses of the occiput and sinuiput, and unfolding all those connected organs and delicate net-work, where thought is formed, fixed, and developed.

This immense application of their master's system has been reserved for the bold suppressors of those illustrious men. They alone can have the bump of genius prominent enough to form a plan

so precious. Yet two distinguished medical men are at the head of this novel *orthophrenological* establishment. Doubtless, it will be managed by these enthusiasts with great judgment and science united. But may it not be apprehended that ignorant and covetous speculators will quickly take advantage of the credulity of the public, ever fond of the new and marvellous? And that, in these Lazarettos of human reason, wretched children will be immured whose skulls may be pronounced defective, or anomalous, when submitted to the rule and compass of such empirics? They might, if left to the operations of nature, become superior characters, but will infallibly be reduced to the condition of idiots or madmen, in undergoing this process of compression and remodelling of the brain. The methodical classification of human beings into casts, according to the different degrees of their intelligence, would soon make us retrograde to the slavery of feudal times.

**Imprisonment for Debt as practised in England.**—Whitecross street prison is by far the largest and most extensive of the gaols in which men in this country are confined for debt. Its prisoners are more numerous, its enactments and regulations more severe, its accommodations more restricted, and its society more mixed, than those of the King's Bench, the Fleet, the Marshalsea—and we had nearly said Horsemonger lane; but we recollect that the latter is a gaol simply fit for felons, and into which it is an inhuman outrage on the first principles of justice to confine a person who has not been guilty of some marked and heinous crime. The Whitecross street prison, which has not been erected more than a quarter of a century—if so long—was built for the purpose of accommodating in one temple of sorrow, poverty and guilt, the debtor's side of Newgate, the Poultry and Giltspur street Compters, and the Ludgate prison, the three last of which were originally separate buildings in different parts of the city. The new prison was divided into wards, or compartments, named after the old gaols, and so called the Ludgate ward, the Giltspur ward, the Poultry ward, &c. Besides these, there is the Middlesex side of the prison, intended for prisoners arrested within the county, and the forty-shilling ward, for the debtors, sent in by the orders of the Court of Requests, and whose embarrassments do not overtop the sum of forty shillings, until indeed they become doubled by the costs of law. We must also mention a receiving ward—the room into which debtors are ushered the first day and night of their imprisonment—a chapel, a sick ward, a strong room, a kitchen, and a sort of tap, to which the inmates have given the nomenclature of "the Scratch"—and I believe we have told of all the departments and divisions of one of the most monstrous leviathans of tyranny and iniquity ever raised by human industry upon the curse-cemented superstructure of poverty, misfortune, persecution, dishonesty, and guilt. Within no walls, not excepting even those of the Bastille and the prisons of the Spanish Inquisition, has there ever existed so deep and heavy a load of positive unhappiness—of actual heart-breaking acute misery. Greater torture of the limb, mightier exercise of terror, more severe personal suffering, and darker dungeon-like confinement, have, we know, often hurried men to confession or to death—have broken a coward, sometimes even a brave spirit; have crushed a weak constitution, and shattered the energies of youth and hope. But these effects have in all lands taken their rise in state-tyranny—they have been visited in the fear or the suspicion of governments, or by the mad superstition of priests; or they have been the punishments of desperate treachery, or atrocious penal crimes. Never have they been the result of a widely practised and openly avowed system, founded upon laws framed by a legislature in support of a free constitution. Neither, we are prepared to prove, has the worst state or criminal prison in any other land—and we are willing to retread the path of civilization as far as one hundred years will take us back into times and practices of cruelty—disseminated so much real sorrow and real ruin too—as the English Debtors' Prison of Whitecross street, in an equal period of one, two, four, eight, or even ten years. For two instances in which they have guillotined a man's head in France, or crushed his body upon the wheel in Spain for state treason, religious heresy, or civil murder, you will find ten where they have broken his heart in England—for debt! and for one instance where the Inquisition or the Bastille, having imprisoned a father in those lands,

have also driven the family into exile, you may get fifty where an Englishman's confinement in Whitecross street has plunged his wife and children into what are worse than a thousand exiles—starvation and despair. Individual suffering is undoubtedly greater in the state dungeon; but spreading, gathering, goading privation and misfortune—smirking as it were from the actual prison into the great heart of society, and poisoning the social springs of life,—take their rise and go abroad from the Debtors' Gaol.—[Scenes, &c. by a Clergyman.]

**The Tower of Skulls.**—They took us to see a most remarkable edifice, called Burjer Roos, which as its name implies, is a tower entirely constructed of human skulls, reposing in regular rows, on intervening layers of the bones of the appertaining bodies. This curious tower stands close to the sea, at a little distance from the Fort, or Berjes-Sook, and is at present twenty feet in height, and at its base ten feet in diameter, but tapering to its summit: with these data, knowing what space is occupied by a skull, a calculation might easily be made of the number of men which were required to build it; though there appears no doubt that it was formerly, as the natives assert, much wider and higher. No tradition is preserved of its origin, except that the skulls are those of Christians. \* \* \* To preserve it, it is occasionally covered with a coat of mortar, but when I saw it, a great part of this had fallen down, and exposed to view the ghastly-grinning skulls.—[Temple's Excursions in Algiers.]

**Cheap Cure for Fever.**—A German doctor, during twenty-five years' practice, has never failed to cure intermittent fever, by strictly and literally starving his patients for three whole days. He allows them only a little water; and after the fast accustoms them to food gradually.

**WINE FROM THE COMMON BRAMBLE.**—Five measures of the ripe fruit, with one of honey and six of water, boiled, strained, and left to ferment, then boiled again, and put in casks to ferment, are said to produce an excellent wine.—[Receuil Industriel.]

Engineer Department of the New York and Harlem Railroad, May 24, 1835.

**TO RAILROAD CONTRACTORS.**—Proposals will be received at this Department until the 29th of May for Excavating a Tunnel through rock at Yorkville, from 18 to 24 feet in height, 24 feet wide, and 844 feet long.

For 15000 yds. of Rock, and 8000 yds. of Earth, north and south of the same.

Proposals will also be received for making an Open Cut Excavation where said Tunnel is proposed, which, together with other excavations, will amount to about 65,000 yds. of Rock, and 12,000 yds. of Earth.

Plans and specifications will be furnished 10 days previous to the time above mentioned.

The work will be required to proceed immediately after being put under contract, and to be completed by the 1st of December, 1835. Satisfactory security will be required of the contractors for the faithful performance of the work.

Communications may be addressed to the Engineer, at his office, No. 9 Chambers street. By order of the Board of Directors, JOHN EWEN, Jr., Engineer of the N. York & Harlem Railroad Co.

#### RAILROAD CASTINGS.

**MANY & WARD,** Proprietors of the Albany Eagle Air Furnace and Machine Shop, will make to order cast wheels, chairs and knees, and every other description of castings required for railroads. R-ly 1624

#### STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads.

No. 264 Elizabeth street, near Bleecker street, New-York.

**RAILROAD COMPANIES** would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad now in operation. J 25 1f

#### NOTICE TO MANUFACTURERS.

**SIMON FAIRMAN,** of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for shingles. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one-half of his patent right for the use of said machines throughout the United States. Any person desiring farther information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh. August 15, 1835. AUG 15